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**DK Token Discovery Specimen (enlarged):** Crude uniface lead disk with DK ligature and denticle border emitted by David Kirke in Ferryland, Newfoundland, circa 1640.

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**Submitting Material for Publication**

We encourage our readers to consider submitting material on early North American numismatics to CNL for publication. In general, this includes coins, tokens, paper money, and medals that were current before the U. S. Federal Mint began operations in 1793. However, there are certain pieces produced after the 1793 date that have traditionally been considered part of pre-Federal numismatics and they should be included. We cover all aspects of study regarding the manufacture and use of these items. Our very knowledgeable and friendly staff will assist potential authors to finalize submissions by providing advice concerning the text and help with illustrations. Submissions, in either electronic or hardcopy format, should be sent to the editor via the e-mail address given in the editorial or through the ANS at the above postal address.



In this issue we are pleased to present another important, in-depth study by award-winning author Dr. Louis Jordan. In the summer of 2004, archeologists uncovered a lead token with the initials DK on one side in the town of Ferryland, Newfoundland. This token, which is dated to the 1640s, is a significant find because it may be the earliest known coinage produced in British North America. Lou explains further:

In this article I discuss the newly discovered DK token as an artifact and discuss why it was produced using the current historical and archeological evidence on the social and economic situation in early seventeenth century British colonial Newfoundland. This inquiry focuses on how daily exchange was conducted, what coins circulated and the role David Kirke had in Ferryland during the 1640s insofar as these topics elucidate the suggestion that the lead DK disk served as a small change token.

I also present a second topic, partially discussed in the text but more fully explained in the footnotes, relating to the role of small change lead tokens in England during the Elizabethan and early Stuart eras. The study of lead, pewter, tin and related small change tokens is an area that needs further research, not only in relation to a more complete taxonomy of varieties and method of manufacture, but also regarding their uses in daily exchange. Colonial American numismatists have incorporated many facets of English and Irish small change into their studies, including regal patent farthings, the copper trade tokens of the 1650s-60s as well as several other early coins such as the St. Patrick coppers and British and Irish regal halfpence and their respective counterfeits. However, lead

tokens continued to be part of the small change mix in England and in the American colonies during the seventeenth century. We know Philadelphia merchants protested against the importation of large quantities of lead and pewter tokens that were circulating in 1698 while the production of what were described as brass and tin tokens was the focus of a Massachusetts Bay act of 1701 against making or passing base or counterfeit money. Several counterfeit operations of the era were recorded as having used lead or pewter to produce coins including Richard Clark in Maryland, who produced "peices of the Eight of Spaine and the Dollars of the Low Countrys ...made of pewter glass and other mixt Mettall." Counterfeit cast pewter and lead halfpence were also uncovered in the Philadelphia Highway find. Certainly other varieties of privately produced lead, pewter or other mixed metal coins and tokens circulated in colonial America, the lead DK token being the most recent find.

Lou's paper is a significant contribution to the study of numismatics in early North America. His ability to dig out the facts from centuries past is impressive and his ability to present these facts in a well-written paper is equally impressive. As you read Lou's paper you will learn from a numismatic perspective about life and the people who lived it in the New World.

Also included in this issue is a reprinted article by your editor concerning the 1753 coppers crisis in New York City. A proposed devaluation of copper halfpence resulted in heated controversy, confusion, and rioting. The article, which is based upon information gleaned from the local newspapers of the time, presents both sides of the question. As with most controversies, in the beginning emotions ran very high as the pros and cons of devaluation were publicly discussed, but with time the turmoil subsided as the majority of the people began to accept the devaluation.

I wish to remind you that back issues of *CNL* are available from the ANS in either hardcopy or electronic format (PDF) on CD-ROM. The CD can be ordered from the ANS website, plus you have the option of contacting Juliette Pellitier

at the ANS to obtain either the CD or individual issues in hardcopy. Juliette's contact information is provided on the inside of the front cover of this issue as is the address for the ANS website.

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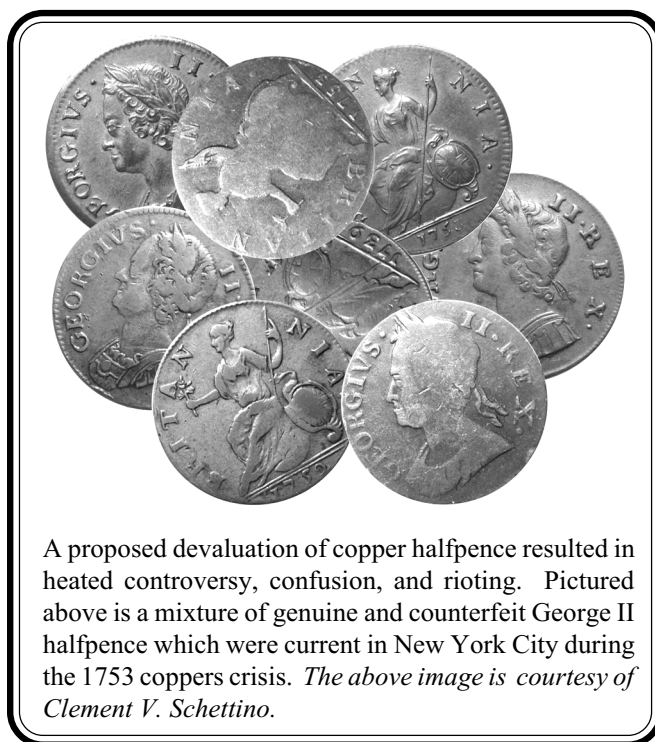
## The 1753 Coppers Crisis in New York

by

Gary A. Trudgen; Vestal, NY

(G14)

This article was first published in 1991 by Bowers & Merena Galleries, Inc. in *Rare Coin Review No. 85*.  
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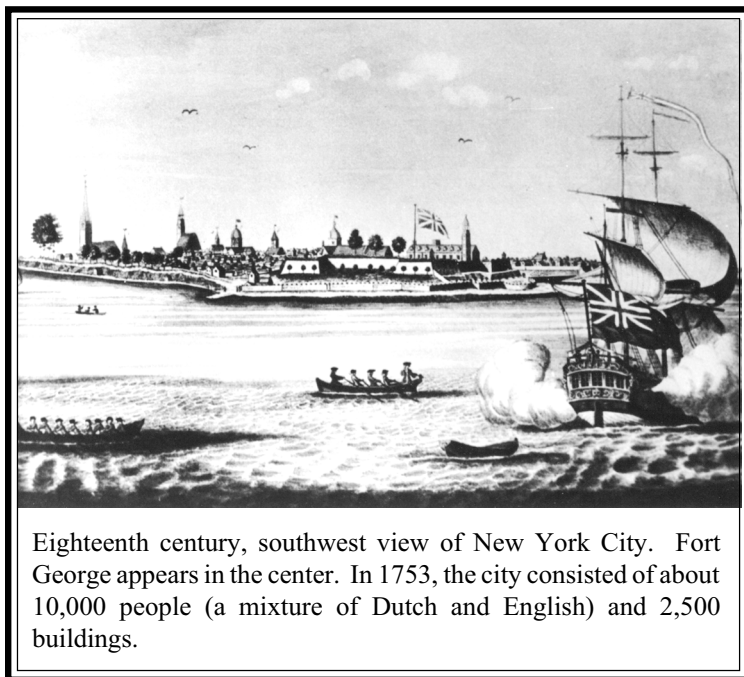
The colony of New York was in shock. Their new governor of two days, Sir Danvers Osborn, was found dead on the morning of October 12, 1753. After complaining of "a great disorder in his head," he hung himself by a handkerchief fastened to a spike on top of a garden fence. The government fell upon the shoulders of Lieutenant Governor James DeLancey. Elsewhere in the colony, trouble of another sort was also brewing.

Back in 1750, New York had found itself flooded with copper halfpence. These were genuine British halfpence, struck by the Royal Mint in London. The problem was that halfpence had more purchasing power in New York than in the cities of Boston and Philadelphia. In New York 96 halfpence were equivalent to one Spanish dollar. But in New

England it took 108 halfpence and in Pennsylvania 112.5 halfpence to equal one Spanish dollar. Thus, halfpence flowed into New York from these colonies, while silver and gold coin flowed out.

To combat this evil, New York City merchants requested that halfpence be devalued in their colony. They suggested that instead of passing them at the rate of 12 per New York shilling, they should pass at 14 to the shilling. Approximately 30 merchants agreed to meet and pledge themselves to this devaluation. Apparently their action did not gain acceptance because the rate remained the same. But a precedent had been set.

Meanwhile, in England the counterfeiters were hard at work. In eighteenth century England, copper coins were not considered real money because the metal value of the coin was less than its face value. The difference between the face value and intrinsic value covered the minting costs. Therefore, counterfeit coppers were generally accepted in trade if their weight was near that of the regal coinage. But, in 1753, there were so many lightweight counterfeits placed into circulation that the English merchants refused to accept them. As a result, large quantities of these bogus halfpence and farthings were shipped to America. A bag of coppers was examined



Eighteenth century, southwest view of New York City. Fort George appears in the center. In 1753, the city consisted of about 10,000 people (a mixture of Dutch and English) and 2,500 buildings.

in New York at this time and found to contain 30% counterfeits. And these counterfeits were almost one-half the weight of genuine regal coppers.

This festering situation finally erupted in New York City during the final month of 1753. On December 3rd the following frantic bulletin appeared in Parker and Weyman's *The New-York Gazette or the Weekly Post-Boy*.

The Confusion in this City, occasioned by counterfeit Copper English Halfpence amongst us, is almost inconceivable: —for not-

withstanding the large Quantities of good Pence we have long had, there is now hardly any Sum offered, but there are counterfeit Ones intermixed; and to such a Degree of Suspicion, is the common People raised, that many good Pence, which have passed current perhaps for above 20 Years past are now refused. —What Punishment must be owing to those Pests of Society, who have thus artfully and villainously introduced those base Half-pence amongst us, by which the Fair-Traders as well as the Poor, are thus injured!

Halfpence were used for small transactions. Now everyday trade was almost at a standstill because panic dictated that most halfpence were to be shunned. The old “tried and true” King William halfpence were the only ones accepted. The notice ended on a revengeful cry of desperation.

Immediate action was necessary. Hurriedly the New York Legislature prepared a new law to attack the problem. On December 12th “An Act to Prevent the importing or passing Counterfeits of British Halfpence and Farthings” was passed. In the preamble the law acknowledged that counterfeit coppers were “...now passing in this Colony, to the Great Damage and Loss of the Inhabitants.” It provided for a £100 fine for importing counterfeit British copper. Also, if an individual knowingly passed counterfeits, a fine of 10 times the amount passed would be imposed. The law further stated that if anyone willfully kept copper counterfeits in his possession for ten days, it was equivalent to importing them. All counterfeit copper that was seized was to be melted down and sold by the General Court. The proceeds of the sale were to be used to benefit the poor.

The preceding law was certainly a step in the right direction. However, the underlying problem of overvalued coppers still remained. The General Assembly, which had just adjourned, determined to “consider a method of ascertaining the value of copper half-pence and farthings in the colony.” But they wouldn’t do this until after May 1, 1754, during their next session. However, many prominent people in the city felt this problem also required immediate action. So, a meeting was called and held at the Merchants Coffee House, a four-story structure located at the southeast corner of Wall and Water Streets.

It was a decisive meeting because the action required was evident. A resolution, dated December 18, 1753, was issued and signed by 72 prominent citizens, many of whom were merchants. They declared "That we will not, after this Day receive Copper Half-pence, otherwise than Fourteen for a Shilling, and that we will pay them away at the same rate." Clearly the proposal made back in 1750 had not been forgotten. The resolution, along with the names of the subscribers, was made public in the city newspapers on the following Monday, Christmas Eve.

Appended to the resolution was a convincing essay on why the devaluation was necessary. A calculation was done which showed that for every £2000 in New York currency of imported halfpence, the true metallic value was only £1275. A whopping 57% differential. This calculation was done assuming that halfpence were of full weight and pure copper, but it did not consider minting expense. However, it was noted that many of the current halfpence were underweight and of unpure copper. These two deficiencies were generously allowed for the expense of coining. Indeed, at 12 to the New York shilling, British halfpence were overvalued in the colony of New York!

Would the majority of the populace listen to reason and consent to the proposed devaluation? After all, this wasn't their government speaking. A week later, in the New Year's Eve edition of Parker and Weyman's newspaper, the following announcement was made.

We are credibly informed, that several other Merchants and Shop-keepers, besides those mentioned in our last Paper, have since that, determined to take or pay Copper Half-pence no otherways than Fourteen to the Shilling, particularly the Majority of Coentie's-Club.

Whatever the Coentie's-Club was seems to have been lost in the mists of time. There was a Coentie's Slip and Market, located in the southeast section of the city. Perhaps the merchants in this area were socially or commercially organized. Nevertheless, it appears to have been considered significant that the majority of the club's members supported the devaluation.

Not all were happy with the proposed devaluation. On the same day that the preceding notice appeared, Hugh Gaine's newspaper, *The New-York Mercury*, carried a letter in opposition. A writer using the pseudonym "The Plain Dealer" acknowledged that halfpence were overvalued and their value should be reduced. But he argued that they should wait for the General Assembly to determine how the reduction should be made. He stated that the method proposed by the 72 individuals was not equitable. It would place the burden of the reduction (nearly a 14% loss) on the poor because most or all of their money was in copper. On the other hand, the rich, who held very little copper, would pay almost nothing. Furthermore, he observed, some of the rich were at the heart of the problem because they had imported halfpence and profited from it.

The following week, in the January 7, 1754, issue of *The New-York Gazette*, another lengthy letter appeared concerning the crisis. An individual who styled himself as "Another Plain Dealer" criticized those who favored keeping halfpence at 12 to the shilling. He was disappointed that his namesake had not proposed a remedy to the problem or had not given a convincing reason why halfpence should continue to pass at 12 per shilling. He believed that those who favored keeping halfpence at 12 to the shilling were those who had profited by it and were fearful of losing their gainful trade. In addition, he suspected these same people to be the importers and vendors of counterfeit halfpence.

"Another Plain Dealer" believed that it wasn't in the province of the New York Legislature to consider a halfpence devaluation because Great Britain had no law requiring its people to accept copper halfpence. He suggested the legislature could be involved in another way. In order to remove the burden of the devaluation from those who held halfpence, he proposed the following

plan. Appoint assay masters and assign one to each city alderman. Those who possessed copper money would take it to their respective alderman before a certain date. The assay master would remove any counterfeits. The owners name and amount of copper money would be recorded. The owner would then take an oath that he would pass his halfpence at 14 to the shilling. The General Assembly could then consider a method of compensating the owner for his loss, such as through a law, lottery, or tax.

On the same day, Gaine's newspaper carried another letter that objected to the devaluation, this one written by "A Citizen." He insisted that the majority of the people still pass halfpence at 12 to the shilling, and that the people would never consent to passing them in any other manner unless the General Assembly thought it proper to change their value by law. He questioned the purpose of the General Assembly if any group of men could meet and call for a devaluation. Again, it was stressed that if halfpence were to pass at 14 to the shilling this would be a loss of 3s & 4d on every pound, enough for the poor to purchase 10 loaves of bread. He also reiterated that it was the merchants who imported halfpence, "generally in casks, which are unladen and entered as Nails."

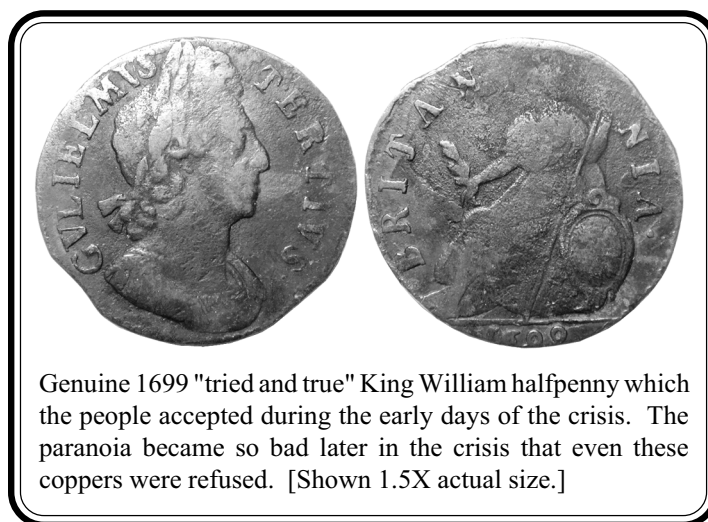
The halfpence devaluation was on everyone's mind and the subject of considerable conversation. Rumors flew. Someone reported that Philadelphia had agreed to now take halfpence at 12 per shilling because they had none. However, upon enquiry, it was found that this was untrue and the City of Brotherly Love had no intention of changing their rate of 15 halfpence to the shilling.

On Friday morning, January 11th, rioting broke out in the city. This tumult was brought on by individuals who had harangued the poor concerning the injustice of the halfpence devaluation and the resulting hardship for the poor. Two people threw halfpence into the crowd, which started a frenzy. Then a group of people appeared in the streets armed with clubs and barrel staves. An individual who was beating a drum preceded them. Law abiding citizens were terror-struck. Commander-in-Chief James DeLancey took immediate action by issuing a proclamation which threatened to prosecute all persons to the fullest extent of the law if they did not disperse. This had the desired effect. Shortly thereafter, the Supreme Court appointed a grand jury of 20 people to investigate the matter. Within a week the grand jury reported that the riot had been caused by "some deluded People, most of them Strangers," who thought they were defending the rights of the poor.

A final letter, this one unsigned, appeared in the January 14th issue of the *The New-York Gazette*. It was titled "Remarks on the late Reduction of Copper-Pence, with a Refutation of the Objections against it." The author began philosophically by stating that man is naturally reluctant to change, especially when it adversely affects his finances. He then reviewed the progress of the crisis and went on to say that it was an excellent time of the year for the devaluation because the poor had already laid in their winter stock. Finally, he believed that the proposal advanced the previous week by "Another Plain Dealer" was "disgustful" and "unreasonable." He asserted that the suggested provincial tax was unjust because the whole colony would pay for the folly of a few.

In the same paper a significant announcement was made. During the previous week, the mayor and aldermen of the city would only take halfpence at 14 to the shilling when they had collected excise tax in granting licenses. Furthermore, it was stated that these city officials were recommending that the retailers do the same. Now that the city officials had made their position known, the majority of the inhabitants were willing to accept halfpence at the reduced rate. The announcement ended with: "In short, the Generality of the Inhabitants of this City, are now so truly sensible, that the lowering of Pence to fourteen to the Shilling, will be attended with salutary Effects, that very few, if any, will now take them any other Way."





The following week, in the January 21st issue of *The New-York Gazette*, a final short notice was published concerning the halfpence rate reduction. It read: "There has not been the least Talk here of taking the Pence at Twelve to a Shilling: Our People would rather lower them to Eighteen for a Shilling: And if there should then be a want of Change to Print a Number of Penny Tickets." Through exaggeration, the notice informed the reader that the devaluation was now universally accepted.

But the crisis didn't die easily. The circulation of coppers remained impeded, even though the devaluation was now accepted and large shipments of counterfeit halfpence were being confiscated by the authorities. In fact, a notice in *The New-York Gazette* of April 22nd indicated that the problem had grown worse. The writer stated: "...the Infatuation of Mistrust, if it may be so termed, is so unaccountable, that the King William Half-pence, are now almost universally refused as counterfeits, altho' it is certain, that there are fewer of that sort bad, than of others...." However, time heals all wounds and eventually the people conquered their paranoia and allowed coppers to circulate at the new rate.

The halfpence value reduction to 14 per shilling held for the next 33 years. It wasn't until 1787, during the state coinage era, that the rate was changed again. Much had happened during these intervening years. New York was no longer a colony of Great Britain, but now a state within the recently established nation of the United States of America. On April 20, the New York Legislature passed a law titled "An Act to regulate the circulation of copper coin." Several types of copper coin were current at this time. This law allowed only the coppers which weighed one-third ounce (48 to the pound) and consisted of pure copper to circulate. And the value of these coppers, which included halfpence, was set at 20 to the New York shilling. A drastic reduction in value from the old rate of 14 to the shilling.

In retrospect, the 1753 copper money devaluation, within the colony of New York, was clearly a case of Manifest Destiny. The long-lived problem of overvalued halfpence was brought to a head with the introduction of counterfeit halfpence. When everyday trade practically came to a standstill late in the year, immediate action was required. Prominent citizens responded to the crisis when their government failed to take action that promised prompt relief. After a lot of discussion, both pro and con, the suggested rate reduction was accepted by the majority of the people. They knew it was necessary for the good of their colony.

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## The DK Token and Small Change in the Early Seventeenth Century Settlement at Ferryland, Newfoundland

by

Louis E. Jordan; South Bend, IN



**Figure 1:** The DK token discovery piece. Upper image; obverse and reverse (coin turn) shown 3X actual size. Lower image; obverse and reverse actual size. *Reproduced with permission, courtesy of Professor James Tuck, the Colony of Avalon Foundation, Ferryland, Newfoundland and the Archaeology Unit, Memorial University of Newfoundland, St. John's, Newfoundland.*

### A numismatic artifact is recovered

In July 2004, Aaron Miller, a graduate archeology student at the Memorial University of Newfoundland, was working under the direction of Professor James Tuck on the excavation of an early seventeenth century British colony at the small coastal community of Ferryland. While clearing debris from the site of the David Kirke house, Miller noticed something shiny in the ground near the remains of a cobble floor. He reached down and uncovered a small but chunky lead disk caked with dirt. Miller washed off the artifact and discovered it contained the initials DK. The significance of this discovery brought national attention to the remote harbor. In a news interview Professor Tuck suggested this object was a locally produced trade token, datable to the 1640s.<sup>1</sup> If true, the artifact would be the earliest known coin produced in the British colonies of North America! The only New World related British coinage of an earlier date is the Somer Islands Hogg Money token issue of 1616, which was produced in London and then shipped to St. George's Town, Bermuda, for local use. If this lead disk from Ferryland with the initials DK is indeed a token produced in Newfoundland during the 1640s, it would predate the earliest Massachusetts silver, the NE coinage, first issued in the fall of 1652.

<sup>1</sup> The announcement was made on the Canadian Broadcasting Corporation, August 3, 2004. It appears on the CBC website in the section "Health and Science" under the title "17th-Century Coin Found in Newfoundland," last updated, Tuesday, 03 August 2004 at 14:57:14 EDT and is found at the URL: <http://www.cbc.ca/story/science/national/2004/08/03/oldcoin040803.html> [last accessed December 26, 2005]. There was also a television news segment by reporter Linda Calvert (running 2 minutes and 16 seconds) on CBC-TV containing information not found in the written story. The broadcast can be downloaded as a QuickTime movie at the abovementioned URL. In April of 2005 Paul Berry, Curator of the Currency Museum of the Bank of Canada, composed a concise three-page article on this find, titled 'Canada's First "Coinage"?' to appear in a forthcoming issue of the *Avalon Chronicle*.

The artifact is a thick and somewhat out-of-round disk of lead, wider along the x-axis with a horizontal diameter (9:00 to 3:00 o'clock) of 18.33 mm and a vertical diameter (12:00 to 6:00 o'clock or the y-axis) of 17.27 mm [figure 1]. It is just about the same diameter as the Richmond and Maltravers oval pattern farthings of 1625-36, which average 18 mm and slightly smaller than the 19 mm English threepence.<sup>2</sup> However, the size of the DK token differs from contemporary English coins in that it is much thicker. For a point of comparison, this artifact is about as thick as a Soho "cartwheel" penny of 1797, which averages 3 to 3.5 mm in thickness. Also, the lead DK disk exhibits far greater fluctuations in thickness than contemporary coins: on the rim at 12:00 o'clock the planchet thickness is 2.83 mm, while at 3:00 o'clock it is 3.57 mm, at 6:00 o'clock it is 3.42 mm and at 9:00 o'clock it is 2.16 mm. Basically, the item is thickest at 3:00 o'clock at 3.57 mm and thins down gradually along the horizontal or x-axis to the 9:00 o'clock position of the rim where it is 39.5% thinner at 2.16 mm. However, this gradual reduction along the x-axis was not uniform along the entire vertical or y-axis. During production more lead flowed toward the lower right quadrant of the rim, from 3:00 to 6:00 o'clock, which is the thickest portion of the object, than flowed to the upper right quadrant, which is about 18% thinner (this is the difference between 2.83 mm at 12 o'clock and 3.42 mm at 6:00 o'clock). It is evident the Ferryland artifact was not prepared from a planchet, since both machine rolled and hammer-prepared planchets of the era have far narrower tolerance fluctuations than this item. The lead disk weighs 7.5 grams, which equals 115.7 grains.<sup>3</sup>

The obverse of this disk displays a denticle border surrounding a central design consisting of the letter D followed by the letter K, with the upright first stroke of the K superimposed over the downstroke of the bow of the D; paleographers would refer to this as a DK ligature. The reverse of the object is plain but contains several scratches, pits and nicks. The crudeness of the item and the extreme fluctuations in thickness suggest the lead disk was formed in a mold. Casting lead disks by pouring molten lead into a mold was the easiest and most cost effective method of coin production because it did not require any special coining equipment other than a reusable inexpensive mold. Lead melts at a relatively low temperature, about 375° Fahrenheit, therefore lead musket balls, tokens or other lead objects of a similar size could easily be produced at home beside a hearth or even outside around a campfire. Due to the ease of manufacture, small change lead merchant tokens and jettons or counters had been locally produced in fairly substantial quantities both in London and in the English countryside since the 1570s.<sup>4</sup>

2 The initial token farthing issues under James I, the Harington farthings of 1613-14, were first issued at 12.25 mm and then increased to 15 mm, followed by the Lennox rounds of 1614-25 at 16 mm. The final pattern farthing issue under James I, the Lennox ovals of 1622-25 averaged 17.25 mm, while the initial issue under Charles I, the Richmond rounds of 1625-34 averaged 17 mm, with a transitional issue of 1634 at 16.5 mm; the Richmond ovals of 1625-34 averaged 18 mm, as do the Maltravers ovals of 1634-36, while the Maltravers rounds of 1634-36 averaged 17 mm. The final issue, the Rose farthing tokens of 1636-44, averaged only 13 to 14 mm (Peck, pp. 35, 37, 38, 52, 64, 65, 69, 72 and 75). The threepence, initially issued by Edward VI, was a common coin during the Elizabethan era (included in her third issue of 1561-77, fourth issue of 1578-82 and her milled issue) but was not continued in the emissions of James I; however, during his reign the threepence was privately issued in the Somer Island Hogge money emission of 1616. Charles I resumed production of the threepence coin in regal emissions at some provincial mints during the Civil War, see footnote 88 below.

3 Professor James Tuck provided me with the measurements and weight of the token in an email of December 2, 2004. After my paper was completed I saw a forthcoming essay by Paul Berry that gives the maximum measurements of the discovery specimen as 17.94 mm in diameter, 1.40 - 3.14 mm in thickness, with a weight of 7.4 grams. An image of the coin was recently added to the *Colony of Avalon* website (revised February 2006) at <http://www.heritage.nf.ca/avalon/artifacts/museum.html> (last accessed February 27, 2006) under the category "Artifacts" in the subsection "Interpretation Centre Museum."

4 Mitchiner, *Jetons*, vol. 1, p. 131 and vol. 3, p. 1605, explains tokens and jettons had been produced during the medieval period but the industry waned after 1400 due to inexpensive imported tokens, particularly from Nuremberg. However, soon after the incorporation of the Company of the Mineral and Battery Works in 1565, localized English lead token production rebounded and continued until 1830 (for details and examples see Mitchiner, *Jetons*, vol. 3, pp. 1625-60 and 1812-41). In addition to the lead merchant tokens and counters produced in the cities, lead farm tokens were produced throughout the countryside to be used as counters, often in conjunction with tally sticks, to keep track

The oval shape of the DK disk reflects the oval shape of the mold impression cavity, or reservoir, in which the disk was formed. The denticle border on the obverse of the artifact is circular suggesting the intention of the designer had been to produce a circular product, however, it seems the mold cavity was slightly out-of-round, being about 1 mm wider along the horizontal axis than along the vertical axis.<sup>5</sup> The smooth, rounded rim at the reverse edge of the disk suggests a two-sided "bivalve" mold was used to produce this single-faced artifact. In a descriptive analysis of 124 lead tokens recovered from the Thames, Martin Dean explained,

It is probable that even the uniface pieces were cast in a bivalve mould because none of them exhibit the depressed center characteristic of molten lead cooled in an open mould. Nos. 16, 91, and 92 are duplicates from the same pair of moulds with the obverse and reverse offset by exactly the same amount in each case. This indicates that the two halves were consistently out of alignment due to an inaccurate locating device on the moulds.<sup>6</sup>

We have noted that the DK token was not depressed in the center. The lead did not flow outward from the center but rather the thickness of the disk gradually increases as one moved from left to right along the horizontal or x-axis. Thus, due to the rounded, well formed edge of the reverse of the disk, as well as to the flow of the lead in a single direction across the surface from one side to the other, it seems quite likely the Newfoundland mold form used to produce the DK disk, like its English counterparts, consisted of both upper and lower mold reservoirs.

In his sample of 124 lead tokens, Dean noticed duplicate specimens of three different token varieties displayed the same offset error, suggesting to him that the mold forms had improper alignment markings causing all tokens made from those forms to exhibit the identical offset error. However, in regard to the DK disk, it should be mentioned the mold form, or more precisely, the two reservoirs, were not misaligned; if that had been the case the obverse and reverse edges of the disk would not be aligned. Rather, the problem appears to be due to the fact that when the circular obverse design was cut into the reservoir it was slightly off-center and therefore would

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of the number of bushels of produce a worker brought in from the fields. Early lead tokens were cast in molds made of wood, chalk, plaster, limestone, sandstone or a special unbaked mixture of fine sand, clay and water referred to as "green" casting sand (not green in color but green in the sense that it was not cured). Some molds had several reservoir impressions connected by a central channel running from one reservoir to the next, resulting in an end product of multiple tokens connected by a wide strip of lead that hardened in the channel; this is called serial casting. Some strips, or partial strips, of attached tokens have survived, as have some molds. By the seventeenth century several lead tokens were created using parallel casting, a process whereby a very narrow channel called a "git" connects each mold cavity to a wide central channel thus eliminating the time needed to cut the coins from a strip as well as greatly reducing the time needed to file down the "tags" (sometimes called "tangs") left on the coins from those cut strips. It has also been suggested some tokens may have been individually molded. In Kent and East Sussex, where hops were produced for the London breweries, these tokens (made of lead, tin, copper or various alloys) took on the name of hop tokens and continued in general use through the nineteenth century. On these items see Henderson, pp. 7-8 with an illustration of recovered uncut strips of tokens on p. 69, also Mitchiner, *Jetons*, vol. 3, illustrations 5508 on p. 1828 and 5592-93 on p. 1841, as well as Dean, p. 138, du Quesne Bird, *Numismatic Circular*, April and October, 1969 with illustrations of a chalk mold from Wilshire and a mold from Cirencester and Fletcher, pp. 20-38, with an illustration of a broken portion of a boy bishop token tree shaped mold displaying three incised reservoirs and fragments of two additional reservoirs on p. 34 (from the Moyse's Hall Museum, Cornhill, Bury St. Edmunds, Suffolk). Some original molds for farm tokens survive in the Maidstone Museum and Benefit Art Gallery, St. Faith's Street, Maidstone, Kent. On the methods of serial and parallel casting and the use of green sand see the Smith and Mossman article on casting counterfeits in colonial America. Note: Mitchiner uses the French spelling jeton; the *Oxford English Dictionary* gives jetton as the preferred spelling.

5 The elongation of the artifact is not due to use of roller die press technology as was used for farthing planchet production because the roller die produces elongated stamped images, whereas here the image is round but the metal beyond the denticle border is elongated.

6 Dean, p. 139, the sample included 67 lead tokens recovered at Windsor Bridge (over the Thames between Windsor and Eton in Berkshire) and 57 retrieved at Wallingford Bridge (about 27 miles further upstream past Reading, the bridge is over the Thames between Wallingford and Crowmarsh Gifford in Oxfordshire).

necessarily produce an off-center impression when the two mold forms were correctly aligned. When analyzing struck coins, an impression that is off-center on a planchet is usually equated with either an inaccurate planchet feed or a misaligned upper or lower die; but, in regard to the mold form used to produce the DK disk, the off-center image is probably due to a misaligned impression in a mold and not to a misalignment of the molds. If additional examples of the DK token are recovered and have a similar misaligned impression, it would suggest the problem was not caused by the misalignment of the two mold reservoirs but rather that it was due to an incised image that was not accurately centered in the mold.

Obviously this preliminary interpretation, based on a single artifact, is highly speculative; we would need to compare several specimens to explain more accurately how these lead disks were produced. With only one extant example we cannot come to any definitive conclusions on the method of manufacture nor can we make definitive statements regarding the use of the item. This artifact may have been a unique prototype that never went into production, or, possibly it only had a very limited production run. Alternatively, it is possible such disks were regularly used during the administration of David Kirke but were recycled in later years, with this specimen representing a fortunate survivor that eluded the melting pot. Indeed, because lead has such a low melting point it would be easy for colonists to reuse lead objects as needed, transforming them into musket balls, fishing line sinkers or other items. Presently, only 20% of the Ferryland excavation site has been uncovered; potentially many more artifacts await discovery. Perhaps additional specimens of lead DK disks will be found in the future, possibly in different sizes. However, even with our current limitations, by placing the one discovered example in its historical and archeological context, we can advance some tentative suggestions as to how, when and why this artifact was created, and what role it may have had in mid-seventeenth century Ferryland.

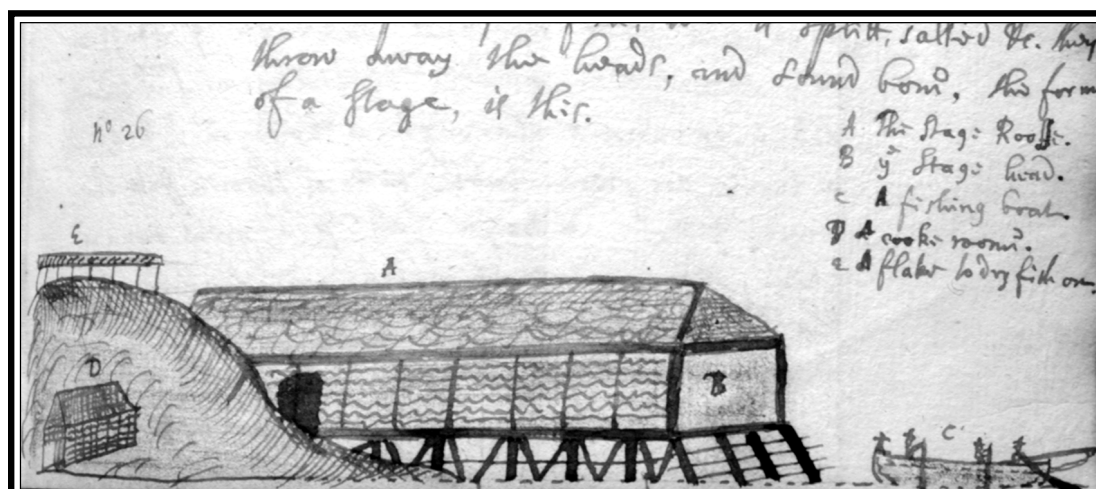
### **The Newfoundland fishing industry and the settlement at Ferryland**

During the sixteenth century French, Portuguese, Basque and English fishermen began taking advantage of the schools of cod that annually migrated off the coast of Newfoundland between June and October. Large 50- to 100-ton fishing ships would arrive in the spring for both offshore and in-shore fishing. The French fleet specialized in offshore fishing, sending ships out into the open seas of the Grand Banks, while the English were in-shore fishermen, with each ship claiming some open shoreline for their exclusive use.<sup>7</sup> The crew would immediately begin cutting down timber to construct a fishing station that would be the base of operations for that season<sup>8</sup> [figure 2]. The central building was a long covered wharf jutting into the water; this was the staging area where the cod were unloaded and processed. The men also constructed a platform called a "flake," where the gutted and filleted cod were left to dry out; finally, at a safe distance from the wharf, they erected a cookhouse where meals were prepared. The fishermen typically slept in

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7 In 1578, Anthony Parkhurst estimated the Newfoundland cod fleet contained about 150 French, 100 Basque, 50 Portuguese and 50 English ships. However, see Pope, *Fish into Wine*, pp. 19-20, who suspects the French fleet at that time may have been as large as 500 ships, with French vessels averaging 100 tons while the English ships averaged only 50 tons. The French fished from their ships out in the Grand Banks while the English set up fishing stations along the coast, rowing out to sea each day in small boats called shallops and simply using their ship as a place to sleep, store provisions and to transport the crew and their supplies to and from Newfoundland. Because of the transient nature of the French fleet it was much more difficult to estimate its size than it was to estimate the number of English fishing stations. Over time the size of the fishing ships increased so that by the mid-seventeenth century the catch was usually transported in 300-ton vessels. However, the tonnage of the ship does not correspond to the weight of the dried cod that could fit in its storage compartments. There are 20 quintals of dried, salted cod to each long ton of 2,240 pounds; but dried fish were bulky in volume yet very light in weight when compared to other cargo. Therefore, a 100-ton ship had the cargo capacity to store 100 tons of wine or other dense commodity, but lacked the capacity to store 100 tons of salted fish. See footnote 119 for further details.

8 Once the fishermen departed the local, Boethuk, Indians dismantled or burned these structures to collect the iron nails used in their construction; thus the stations were newly constructed each year. See Pope, *Fish into Wine*, p. 22.



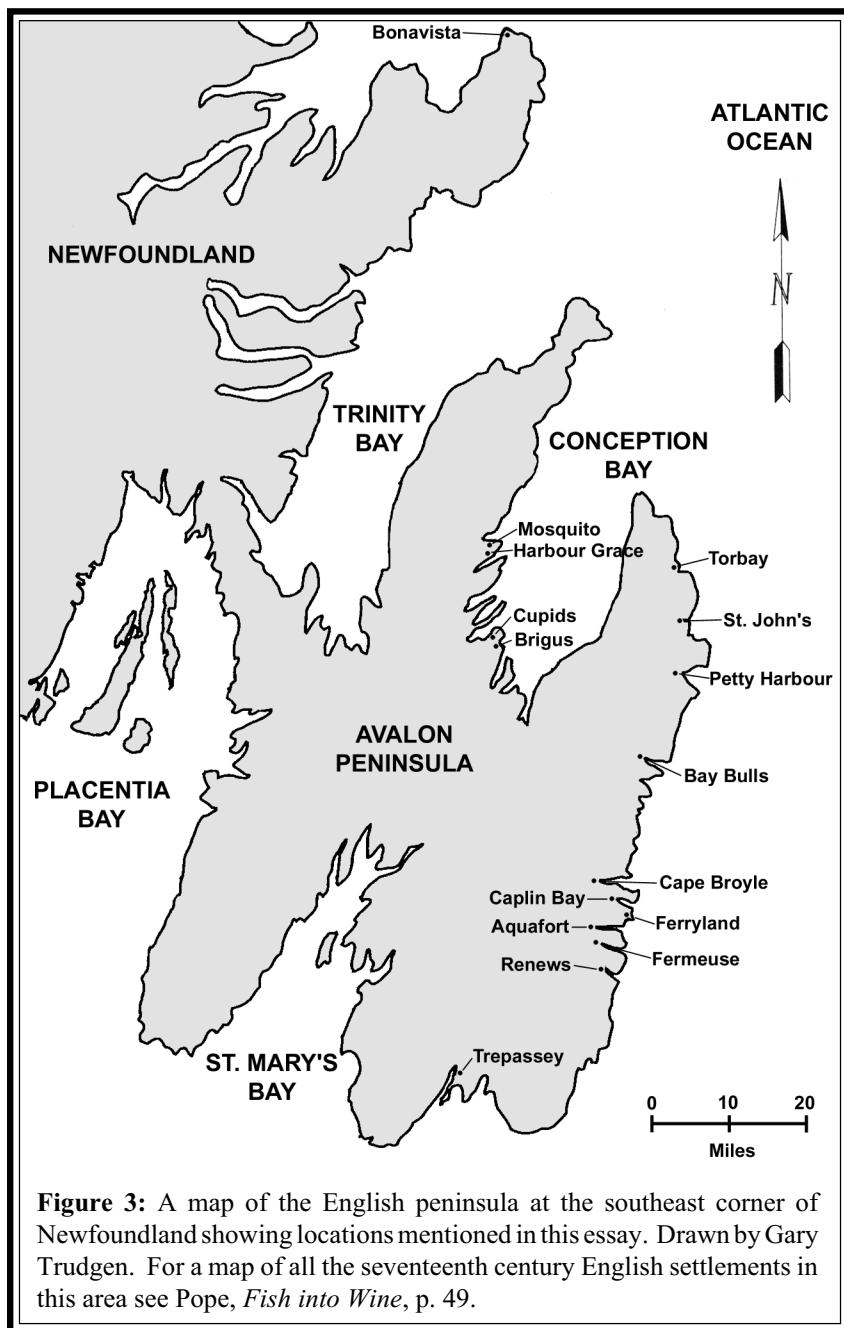
**Figure 2:** A drawing of a fishing station from the journal of James Yonge, 1663. The center of activity is the staging area, which consists of a wharf fitted with a frame and a roof. Yonge identifies the stage roof (A), the stage head, where the fish were unloaded from the boats (B), and a fishing shallop (C). Behind a hill he shows the cookhouse (D) and on top of the hill is a flake (E), where the salted cod were dried in the sun. *Reproduced with permission, courtesy of the Plymouth Athenaeum, Derry's Cross, Plymouth, UK.*

In the text Yonge describes the processing of cod in some detail. He begins, "The complement of men to a boat are 5, that is 3 for to catch the fish, two to save it... They bring the fish at the stage head, the foreshipman goes to boil their kettle, the other two throw up the fish on the stage-head by pears [pairs], that is, a staff with a prong of iron in him, which they stick in the fish and throw them up. Then a boy takes them and lays them on a table in the stage, on one side of which stands a header, who opens the belly, takes out the liver, and twines off the head and guts (which fall through the stage into the sea) with notable dexterity and suddenness..." Yonge, *Journal*, p. 57.

tents or on their ship, which was usually anchored in the harbor or was intentionally beached on the shore. Construction of the site took about a month of work. Once the base station was complete, the crew began harvesting and processing a daily catch. Each morning the fishermen would row out in shallops, five to a boat, spending the day baiting hooks on weighted lines, lowering them into the ocean and then pulling up the line when they caught a fish. The three more senior fishermen caught the fish while the two junior crewmen tended the catch, which typically numbered about 1,000 to 1,200 cod per day. By late afternoon shallops loaded with cod would return to the covered wharf at the fishing station. Shore crews worked into the evening unloading and processing the catch. Most fishermen were paid in shares; typically the crewmen split a one-third share of the season's catch and therefore were motivated to bring as many fish as possible to market.<sup>9</sup>

By the reign of Queen Elizabeth I, several projectors were advocating English settlements be undertaken in Newfoundland, advice that some adventurers acted upon during the early Stuart era. On May 10, 1610, James I granted the London and Bristol Company territory in Newfoundland. They sponsored the initial English expedition, a contingent of 39 colonists under the command of John Guy, who landed at Cupers Cove, now Cupids, Newfoundland, near Brigus in Conception Bay, in August of 1610 [for Cupers Cove and other Newfoundland locations

<sup>9</sup> Pope, *Fish into Wine*, pp. 15-32, 161-93 and 319-26.



mentioned in this paper see the map, figure 3]. By 1615, after enduring many hardships and distressed by ongoing disagreements with the company directors, Guy and other Bristol investors withdrew from the company, initiating a new settlement to the north at Mosquito, now Bristol's Hope at Harbour Grace.<sup>10</sup> In 1616, after several disappointing years, the London and Bristol Company investors began selling off portions of their chartered lands; in all five private patents were issued to individuals ready to fund colonization efforts. The most substantial of these early settlements was George Calvert's seaside plantation at Ferryland, in the colony of Avalon.<sup>11</sup> Calvert sent twelve colonists to Ferryland in 1621 to begin constructing a permanent settlement. Within a year they had erected a central wood framed

10 Pope, *Fish into Wine*, pp. 47-55 and Cell, *English Enterprise*, pp. 22-96. On the archeology of Cupers Cove, see Gilbert's article in *Avalon Chronicles* cited in the bibliography; on pp. 132-33 he lists the following coins recovered from the first occupation: a double tournois of Louis XIII, a James I twopence and an Elizabeth I groat; as well as 589 glass beads that were to be traded to the Indians. The colony continued after Guy's departure. A significant fire occurred ca. 1665, possibly the result of a Dutch attack during the Anglo-Dutch War of 1665-68. Three structures were destroyed in the incident (Gilbert also reported a Charles II half crown from the 1660-62 emission was uncovered in the destruction layer). Following the conflagration the outpost was reduced to two structures at the other end of the village that continued to be inhabited until a second catastrophe struck sometime between 1680 and 1710, possibly a French attack. Thereafter, the site was abandoned for over half-a-century.

11 The colony of Avalon extended about 42 miles along the coastline of the Newfoundland peninsula from Aquafort up to Petty Harbour, with Ferryland as the headquarters. Aquafort is about 3.8 miles south of Ferryland. To the south



building, which Wynne stated was 44 x 15 feet in size, along with a hen house as well as defending the four-acre community within a palisade. By the summer of 1622 twenty more settlers arrived, consisting of some general workers along with several individuals skilled in professions that were needed to insure the prosperity of the colony such as a surgeon, a husbandman, two blacksmiths, a quarryman, a stone-layer, two carpenters, a boat master, a tailor, a fisherman and a cooper including women and children. During that summer two tenements, a salt house and a blacksmith shop were erected, and work was probably begun on Baltimore's 36 x 23 foot stone "Mansion House." In these early years the settlement also included a brew house that doubled as a bakery; additionally, during this period, the waterfront was fortified with a sea wall and both a wharf and an adjacent warehouse were erected. Archeological excavations have also uncovered other buildings whose functions are yet to be identified.<sup>12</sup>

Reports from the colony were very positive so Calvert decided to commit himself to improving the plantation. In 1623, he obtained a patent from James I granting him extensive rights over the colony as the Lord Proprietor. Calvert believed that after an initial investment in colonization he would be able to realize profits from the fishing industry and provide a comfortable life for himself and his family. He acquired 32 fishing boats for the Ferryland settlement and as many as 100 boats for the entire Avalon colony. Overall, it has been estimated by contemporaries that Calvert spent about £20,000 on Avalon. However, at this time Calvert's position at court as the Principal Secretary of State was becoming precarious. Finally, in early 1625 deteriorating relations between Spain and England forced Calvert, a supporter of a Spanish alliance, to resign his position. In recognition for his years of service to the crown, King James I elevated Calvert to the Irish peerage as the first Baron of Baltimore, an area in County Longford, Ireland.<sup>13</sup> Soon thereafter, in 1627, the retired Calvert briefly visited Ferryland for the first time and then in 1628 returned to the colony with his family, staff and more settlers, increasing the population from 60 to a total of over 100 residents.

Calvert found colonization to be more costly than he had anticipated. He was forced to protect Avalon and the fishery from raids, sending ships and men to fight the French privateer Raymonde

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of Avalon, the land from Fermeuse down to Renewes was owned by Henry Cary, Lord Falkland and Lord Deputy of Ireland; in 1623 Sir Francis Tanfield founded a small colony at Fermeuse. The southern portion of Avalon and the land below Renewes had earlier (in 1617) been part of a grant purchased by William Vaughan. Within a few years Vaughan had sold the northern portion of his holdings, from Caplin Bay to Aquaforte to Lord Baltimore and the southern portion, south of Renewes to Trepassey, to Lord Falkland. To the north of Avalon was the colony of St. John's, owned by a group of shareholders, which extended from Petty Harbour up to Torbay.

12 Gaulton and Tuck, pp. 187-206. Also see Captain Edward Wynne's letter of August 17, 1622, in Pope, "Six letters," pp. 14-17, with a list of the colonists. The women included Elizabeth Sharpus, the wife of tailor William Sharpus, Anne Bayly, the wife of colonist John Bayly, a woman who appears to be John's mother, simply named "Widdow Bayly," and a woman named Sibell Dee, listed as a "maide." The children included Digory Fleshman, son of surgeon Roger Fleshman and Richard Higgins, a boy, as well as Elizabeth Kerne and Jone Jackson, both simply listed as girls. Of the four children only Fleshman bears the same last name of other settlers. Also, see *The Colony Of Avalon* website, "Archaeology Report 2005: Outstanding Finds at Ferryland" by Jim Tuck, which explains that the large stone structure inhabited by Baltimore was not the same structure erected during the first year. Tuck explained "The Mansion House has eluded archaeologists for decades, partly because of the more than two meters of overburden and modern structures that obscured it from view. It has also been a common belief that the Mansion House and the first house, constructed by Captain Wynne in 1621 were one and the same. However, a reinterpretation of the documents casts doubt on this belief and points to the large stone structure as Lord Baltimore's Mansion. In 1622, after the first house was completed, Captain Wynne requested six masons, four carpenters, two or three quarry men, and a slater or two in addition to the limestone and lime burner. Clearly, some major construction was planned. The result was the house excavated this past summer, which stands in decided contrast to the wood frame first house which contained only about one-half the living space and was decidedly less grand than the stone building completed a year or so after the colony was first established..." see, <http://www.heritage.nf.ca/avalon/news/report05.html> [last accessed March 26, 2006].

13 This period of Calvert's career has been the topic of much scholarship. The most recent contribution is the excellent book of Krugler, *English and Catholic*.

de La Rade, instead of using his resources, as he had anticipated, to make a profit from fishing.<sup>14</sup> During this same period Calvert also accumulated significant charges for transporting people, food and supplies from England to Avalon. On top of these expenses, the winter of 1628/9 was extraordinarily harsh; half the Ferryland inhabitants became sick with at least ten dying. By the summer of 1629, Calvert was resolved to “committ this place to fishermen that are able to encounter stormes and hard weather,” and to seek his retirement in a warmer climate, near the colony of Virginia.<sup>15</sup> A man named Hoyle was designated as Calvert’s agent in the colony but apparently about a year later Ralph Morley kidnapped Hoyle. When George Calvert died in April of 1632, his son and heir, Cecil Calvert, sent a Captain William Hill to live in the mansion house in Ferryland and act as his agent in the colony.<sup>16</sup>

By the late 1620s English colonization of Newfoundland was being viewed as a more difficult and less profitable enterprise than investments to the south in New England and Virginia. Avalon had been the largest of the proprietary colonies in Newfoundland. Many smaller colonies had either failed completely or were simply relegated to be isolated outposts with just a few inhabitants. Following Lord Baltimore’s departure there was a political and fiscal void in the province discouraging further economic development.<sup>17</sup> It has been estimated that in 1630 there were only 30 to 35 settlers in Baltimore’s entire colony of Avalon and no more than 200 in all of Newfoundland.<sup>18</sup>

Numerous fishing crews still came to spend the summer months catching cod, but there was no longer any local infrastructure to adjudicate disputes between the settlers and fishermen or disagreements between the various fishing crews. In 1634, Charles I issued a series of regulations, known as the Western Charter, that were to be enforced by the captain of the first fishing ship to anchor in each harbor, who was referred to as the Admiral of the harbor for that year. The regulations codified traditional practices but made no mention of the previous land grants issued by James I. This decree was not an attempt to nullify the earlier proprietary grants but rather a realization of the lack of authority in the province and the need to clarify and promulgate general rules of behavior, even if there were few options for enforcement.<sup>19</sup> This was the situation when David Kirke decided to become involved in Newfoundland.

### David Kirke and Ferryland

David’s father, Gervaise Kirke, was a successful London merchant specializing in French wines. During 1626, relations between England and France were deteriorating, resulting in a declaration

14 Calvert stated that La Rade commanded 400 men on three ships and that they had surprised a fishing party at Cape Broyle, seizing two ships from the harbor. Calvert then sent two of his ships with about 100 men in pursuit. The French fled when they saw Calvert’s forces coming, abandoning the two captured English ships. La Rade also abandoned 67 of his crew, who happened to be onshore when the English appeared; the stranded French raiders were soon captured and held as prisoners by Calvert. There was also a second French attack and subsequent pursuit by Calvert. See Calvert’s letter to Charles I, dated August 28, 1628, in Cell, *Newfoundland Discovered*, pp. 281-82.

15 There are many discussions about Calvert in Ferryland. For a recent analysis, see Pope, *Fish into Wine*, pp. 124-32. For Calvert’s letter of August 19, 1629, to Charles I about leaving the colony, see Cell, *Newfoundland Discovered*, pp. 295-96.

16 See the statement from Lord Baltimore’s attorney in his Admiralty Court case of 1651 against Kirke, in Pope, “Baltimore vs Kirke,” pp. 72-74, where it is explained that after George Calvert died “his son and heir, Cecil, now Lord Baltimore, who thereupon forthwith sent one Captain William Hill as his deputy thither... .” In the examination of William Poole, it was stated “Sir George Calvert left an agent here, one Hoyle who was afterward carried away by one Ralph Morley. Two years after the departure of the said Hoyle, Captain William Hill took possession of the mansion House at Ferryland, ...” as found in Pope, “Baltimore vs Kirke,” p. 83.

17 Pope, *Fish into Wine*, pp. 47-55 and Matthews, p. 67.

18 Pope, *Fish into Wine*, pp. 55-56

19 Matthews, pp. 71-75 and Pope, *Fish into Wine*, pp. 32 and 194.

of war in 1627.<sup>20</sup> In this climate Gervaise Kirke and his copartner, William Barkeley, decided to broaden their interests beyond French imports by entering the New World fur trade and established a Company of Adventurers to trade in Canada. Hoping to take advantage of the war to increase their profits, the partners obtained letters of marque and reprisal allowing their company to execute raids against the French in Canada. Thus, when there was a lull in trade, they could turn to plunder. David Kirke and his two brothers led the expedition, which had the good fortune of defeating a squadron of French ships in 1629 and actually capturing Quebec. Kirke took full advantage of this opportunity, confiscating 6,000 furs from local merchants and seizing some ships. That same year Gervaise died, therefore, upon returning home, David took over the family business. David Kirke viewed the New World as a land of opportunity. He had made a profit from fur as well as from the plunder he seized and he also rose in status, being knighted in 1631 for his success in capturing Quebec.<sup>21</sup> Although Kirke became involved in the family business related to the French wine trade he continued to show an interest in furs and also broaden his position by entering the Spanish wine market.

There had been a perennial problem with the French wine trade, namely, the English had no equivalent commodity to trade to France for wine and thus had to purchase it with gold and silver. The wine trade was a continual drain on the English economy. Kirke realized the limitations of his family business and wanted to expand into new areas. He knew salted cod from the English fisheries in Newfoundland was regularly exported to Spain and Portugal. Although the English were not fond of salted cod, Iberian and other Mediterranean cultures enjoyed salted cod (called, *bacalao* in Spanish and *baccalà* in Italian) as a staple in their diet. Once the cod was transported from Newfoundland to a Spanish port and sold, the shipper could immediately purchase a cargo of Spanish wine at a wholesale price, which he then transported to England for retail sale. Thus, one made a profit from shipping cod and then used that capital to make even more profit from wine. The English fish merchants who sent crews to Newfoundland to catch and prepare the cod,

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20 England had been supporting the Protestant French Huguenots in their continued resistance to the Catholic French monarchy. In February of 1626, England stepped in to broker a truce between the king and the citizens of the Huguenot stronghold of La Rochelle. France resented England's intrusion into their internal affairs. At that moment the resentment intensified on both sides due to conflicts between some French and English merchants. The French seized the ships and goods of English merchants, who happened to be in France in February, ostensibly in retaliation for the English seizure of some French merchants' goods back in December. Before the month ended, an embargo was decreed, stopping trade between the two countries. Petitions by several English merchants against the embargo were brought to Parliament, but to no avail. The situation escalated until war was declared in 1627 (the Anglo-French War of 1627-1628). In order to deal with recurring political problems caused by Protestant Huguenots, Louis XIII of France signed an accord on March 20, 1627, with Philip IV of Spain, to fight Protestant advances. King Louis then declared war against the Huguenots, sending troops under Cardinal Richelieu to besiege the Huguenot stronghold of La Rochelle, which was under the command of the mayor, Jean Guitton. King Charles I of England, at the suggestion of George Villiers, the Duke of Buckingham, entered the conflict in support of the Huguenots. In July, before the French siege had started, Buckingham commanded an unsuccessful invasion of the island of Ré, just off the coast of La Rochelle, losing over 4,000 soldiers out of an army of 7,000. After sustaining such heavy losses English support for the Huguenots dwindled. Richelieu's troops arrived at La Rochelle on August 10th and blockaded the city from land and sea in order to starve the inhabitants into submission. Soon thereafter, on August 23rd, the unpopular Buckingham was assassinated in Portsmouth, while planning another campaign against the French. Finally, by the end of October 1628, after losing 20,000 of its 25,000 inhabitants, La Rochelle surrendered. The Huguenots were forced to capitulate. At the Peace of Alés, signed on June 28, 1629, Huguenots were allowed to retain religious and civil rights in France but lost all military and political power. See *Journal of the House of Commons*, vol. 1, 22 Feb. 1626, on p. 823; 17 March, on pp. 837-38; 18 April, on pp. 845-46; and 1 June, on p. 865; the various pages are available at the University of London website, British History Online, from <http://www.british-history.ac.uk/source.asp?pubid=14> [last accessed December 26, 2006] also, Larkin, vol. 2, pp. 141-44 for proclamations of April and May 1627 prohibiting French imports, also several others through p. 212 related to the English army and navy as well as obtaining supplies and munitions.

21 The Kirkes seized Quebec after the 1629 peace treaty had been signed ending the conflict, so, Quebec was officially returned to the French in 1632, in the Peace Treaty of Saint-Germain-en-Laye. As a result, several Quebec merchants brought suits against Kirke in Admiralty Court, asking for compensation for the 6,000 fur pelts and ships that Kirke had seized. It seems even after paying £14,330 in fines Kirke still made a profit, because the merchandise he seized had an estimated value of £16,000 to £18,000; see Pope, *Fish into Wine*, p. 82.

participated in this trade, taking their catch to market each fall, but so did independent freight or sack merchants, who purchased prepared cod in Newfoundland ready for transport. The English fishing fleet annually caught and prepared more cod than they could carry in their ships. For instance, we know that in 1681, the fishing fleet was only able to transport 60% of their catch. Additionally, local Newfoundland resident fishermen were unable to make the long voyage to Iberian markets and therefore needed to sell their catch to an exporter. Thus, sack ships, as they were called, annually came to Newfoundland to purchase and export the extra cod; this is the trade that David Kirke entered during the mid-1630s.<sup>22</sup>

Soon after Kirke started trading salted Newfoundland cod for Spanish wine he realized there was money to be made in Newfoundland and sought to obtain a patent from the king granting him a trading monopoly within the colony. Kirke was able to interest some high-ranking noblemen with political influence to join him in requesting the monopoly. The scheme worked; on November 13, 1637, Charles issued "A Grant of Newfoundland to the Marquess Hamilton, Earl of Pembroke, Earl of Holland and Sir David Kirke, and their heires."<sup>23</sup> The grant allowed Kirke and his partners to enact and enforce laws over the Newfoundland colonists but not over the English fishing fleet. He could collect taxes and was allowed to levy a 5% duty on all "Strangers" who purchased fish (these were primarily Dutch sack ships). There were several other provisions favorable to Kirke, such as the right to import and export goods without paying any duties or customs fees, but the grant also included a stipulation that 10% of all proceeds should be sent to the king. Further, Kirke was not to take land from the colonists nor was he allowed to plant or inhabit within six miles of the shore, except for a provision allowing him to erect defensive fortifications.

It has been observed that King Charles had not granted Kirke property rights, as had been the case in the proprietary grants bestowed by James I to the Newfoundland Company and to George Calvert. Kirke, on the other hand, had been awarded a commercial monopoly within Newfoundland.<sup>24</sup> Kirke's patent expressly forbade him from inhabiting land within six miles of the shore. However, Kirke was an opportunist, more concerned with increasing his wealth and position than following legal restrictions. Indeed, in late June 1638, when first Kirke arrived in Ferryland with his family and about 100 colonists on the ship *John*, he immediately evicted Captain William Hill from Lord Baltimore's mansion house, located just a few feet from the shore, seized the property and livestock for himself and renamed the area Pool Plantation<sup>25</sup> [figure 4].

Thomas Pitcher, captain of a fishing ship from Dartmouth, England, had recently completed construction of his seasonal fishing station in the vicinity of Ferryland when Kirke first arrived. Pitcher testified that Kirke seized Pitcher's ship and threatened to take it away unless Pitcher turned over to Kirke the staging wharf and related smaller structures he had constructed, where the cod were unloaded from the shallops and prepared for market. Pitcher explained that this type of intimidation was Kirke's "usual practice." He stated,

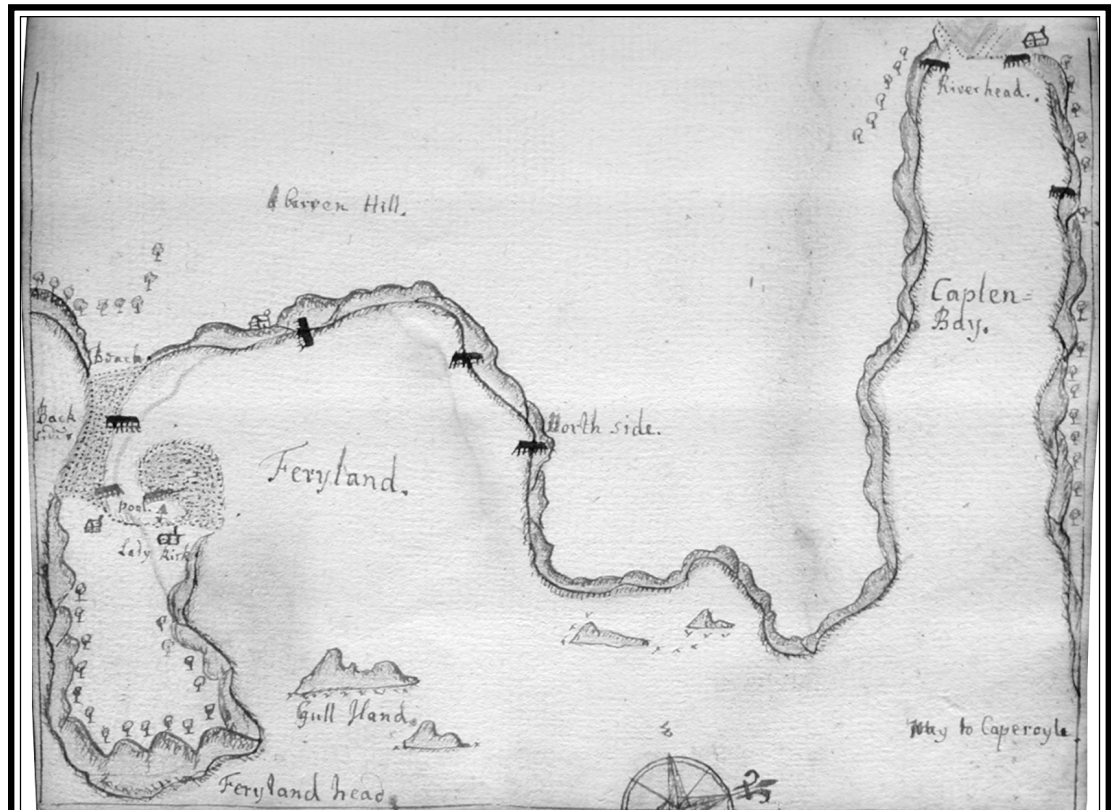
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22 Pope, *Fish into Wine*, pp. 80-121. Kirke's entrance into the Newfoundland sack trade is discussed on pp. 89-90. Initially, Kirke rented ships to participate in the Newfoundland-Spain-England trade, an example being his rental of the *Hector* in 1637. Other early sack trade expeditions to Newfoundland by Kirke, dating from 1634-35, are mentioned in Pope, pp. 112-21. However, once Kirke had obtained his grant to Newfoundland in November 1637, he began purchasing and using his own ships, rather than renting cargo space from others. Documents related to Kirke's sack trade wine shipments from 1648 and 1650 survive and are discussed in Pope, pp. 375-77.

23 Quoted from the text of the grant as published in Matthews, pp. 82-116, I expanded the abbreviation Sr to Sir.

24 Pope, *Fish into Wine*, p. 132-33 and Pope, "Baltimore vs Kirke," p. 64.

25 See the brief of December 23, 1651, by the counsel representing Lord Baltimore, and the examination of James Pratt on March 11 or 12, 1652; both in Pope, "Baltimore vs Kirke," pp. 72-77 and in Scisco, "Calvert's Proceedings" pp. 133-36.



**Figure 4:** A map of Ferryland and Caplin Bay drawn by James Yonge in 1663. Lady Kirke's house is the only structure from the village of Ferryland included by Yonge. It is located in the center of the village near the protected wharf area called the Pool. This map was produced about a decade after David Kirke died, when his wife and her grown children controlled the area. Two fishing stations are located in the Pool Cove with four others along the bay at Ferryland and three in the adjacent Caplin Bay. *Reproduced with permission, courtesy of the Plymouth Athenaeum, Derry's Cross, Plymouth, UK.*

Sir David Kirke, then governor, there having a ship of his own arrived at the Newfoundland in a fishing voyage, about the latter end of June, and unprovided of a stage and room of his own, came with 40 or 50 armed men and dispossessed this deponent of his ship, and weighed an anchor of her, and threatened to take and carry the same away, unless he would deliver up the said stage and rooms for the use of his said ship to use and fish, in which this deponent was thereby enforced to do, to the great damage of his voyage. And it was Sir David Kirke's usual practice and he did do the like and by force of arms, in like manner, dispossessed and drove several others from their stages and rooms fishing in the same and to place and put others in possession thereof.<sup>26</sup>

Kirke immediately took control of the colony, seizing the large fishing stations and reassigning them to his advantage, collecting taxes from foreign fishermen and sack merchants, as well as imposing rents and fees on the settlers and collecting fines for infractions against his com-

<sup>26</sup> Deposition of Thomas Pitcher on November 27, 1667, on the *Colony of Avalon* website, historical documents section at [http://www.heritage.nf.ca/avalon/history/documents/letter\\_57.html](http://www.heritage.nf.ca/avalon/history/documents/letter_57.html) There are similar statements by John Cull of Dartmouth, deposed November 27, 1667, on the website at [http://www.heritage.nf.ca/avalon/history/documents/letter\\_56.html](http://www.heritage.nf.ca/avalon/history/documents/letter_56.html) [last accessed December 31, 2005].

mands.<sup>27</sup> Kirke also exercised his right to institute monopolies, controlling various essential products such as salt and liquor by engrossing, that is, acquiring the entire supply at wholesale prices and then selling those products at excessive rates. By 1640, Kirke was taking possession of all the small fishing stations, called fishing houses, used by local fishermen to unload and process their catch, and began charging inhabitants an annual rent for their use. Further, he "compelled" some settlers to give up their current shore space and rent shoreline at Ferryland for their fishing house. In this way Kirke controlled who would be allowed to fish in which location and thus was able to dole out the better fishing spots to his supporters. Pope has estimated that overall there were about 300 small fishing stations in the province of Avalon (from Bay Bulls to Renew's). Kirke also encouraged inhabitants to purchase liquor licenses from him at a substantial cost; Pope estimated there were about 25 taverns from which Kirke collected annual license fees.<sup>28</sup> A deposition against Kirke from 1667, by an inhabitant of Bay Bulls (about 28 miles north of Ferryland at the northern border of Avalon) named Thomas Cruse stated that,

During all which time of this deponent's abode there, no nation did ever in the least attempt to molest or trouble the English there in their fishery, neither were there any fortifications erected, until the coming there of Sir David Kirke, who planted some few guns at Ferryland and 2 or 3 other places. And, that before Sir David Kirke came there no one paid any customs or tax concerning the said fishery or otherwise but all was free. But after Sir David Kirke arrived there (who brought with him about 30 servants), he imposed taxes on all the inhabitants to pay a greater yearly fine and yearly rents for their houses and ground by the water side in several harbors and fishing places [this refers to a small fishing station or house used by a local fisherman], as this deponent did for a house and some ground granted to him by the said Sir David Kirke as by a writing made in the year 1640, for which he paid the yearly rent of £3 6s8d [that is, ten nobles] and a fatt hogg or 20 shillings in lew thereof. And the said Sir David Kirke did summon the inhabitants of several harbours in the Newfoundland to repair at Ferryland and compelled them to take estates in land in several harbours for erecting of houses and fishing places by the waterside and to pay greater fines and rents for the same, and in case of refusal threatened to expel them out of the land. And also enticed them to take licenses of him for the selling of wine and other liquors and made them pay greater rents yearly for the same – And made this deponent take and pay for such a license £15 per annum [in England at that time the rate was £3 per year for a wine tavern and only 2s6d for an ale-house]. And the said Sir David Kirke himself did keep a common tavern in his own house, which did draw and keep ship masters, fishermen, and others from their fishing employments, to the great prejudice and hindrance of their voyages... And Sir David Kirke's constant practice was to ingross salt and other necessary provisions brought thither for sale for supply of the fishing ships which he sold [i.e. sold] again unto the ships' masters and others at excessive rates.<sup>29</sup>

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27 There are several depositions against Kirke by Newfoundland settlers from 1651 and 1652, such as the testimony of Robert Alward of March 29, 1652, stating that in 1638, David sent his brother Lewis Kirke, commanding the *Hamilton*, to Bay Bulls where he took about £50 value in salted cod from a Dutch sack ship that was about to depart. Although it may not have been clear to Alward, we know that Kirke was permitted this tax by his grant, but it is interesting to see that he was enforcing the regulations throughout the colony within the first few months of his arrival. For this deposition, see the *Colony of Avalon* website at [http://www.heritage.nf.ca/avalon/history/documents/letter\\_31.html](http://www.heritage.nf.ca/avalon/history/documents/letter_31.html); other depositions are at similar urls from letter\_29.html through letter\_44.html [last accessed December 31, 2005]. Also see, Scisco, "Calvert's Proceedings," as well as his "Testimony," and "Kirke's Memorial."

28 Pope, *Fish into Wine*, p. 140.

29 Quote from Pope, *Fish into Wine*, p. 277, with some additional passages from the full text of the deposition available online on the *Colony of Avalon* website, historical documents section, at: [http://www.heritage.nf.ca/avalon/history/documents/letter\\_55.html](http://www.heritage.nf.ca/avalon/history/documents/letter_55.html). For the cost of a tavern license in England during the reign of James I see <http://www.portdown.demon.co.uk/wine.htm>, an excellent site giving a great deal of daily life. Information taken from sources states, "The annual license in 1625 to keep a Wine Tavern in East Retford, Nottingham was sixty Shillings. In James I reign (1603-1625) a license for an Alehouse cost its keeper annually one shilling and six pence paid to the Clerk of the Peace and one shilling to the Justice's Clerk."

Once Kirke settled into his new position he began manipulating revenue so that all the profits flowed to him and his managers rather than to his aristocratic partners in England. Also, although Kirke was a staunch royalist supporter of Charles I, he took full advantage of the situation and the ensuing civil war so that the king never received the 10% share of the proceeds due to him as stipulated in the patent. Kirke kept all the profits and used the tax, rent, license and related revenues to expand his position in the cod and wine trades and to live in a lavish style.<sup>30</sup> Kirke was a conspicuous consumer, at least by Newfoundland standards. His family lived in the mansion house, which Kirke found to be too small and so had it enlarged. Over the decades of occupation his family imported several hundred examples of expensive tin-glazed delft kitchenware, as well as at least nine pieces of extremely rare *terra sigillata* ceramics from Estermoz, Portugal. *Terra sigillata* ceramics were otherwise unknown in the New World and are very rare in Europe; Philip II of Spain acquired some for his daughters and Charles I of England owned a few examples. Sewing thimbles and bodkins found in the Kirke house midden or refuse mound, were made of silver rather than copper or brass and several gold objects were uncovered including two rings, a thimble, and a brooch. David Kirke used tobacco pipes imported from Virginia that displayed his monogram DK in large letters on the center of the pipe bowl and it seems he, or another family member, sported silver plated boot spurs.<sup>31</sup> In 1651, the royalist Kirke was finally recalled to London by the Commonwealth government to stand trial for his financial improprieties. Kirke bargained his way out of financial delinquency charges but was convicted of usurping Lord Baltimore's authority. David Kirke died in a London prison cell in early 1654 without ever having written a standard last will and testament because he feared any property mentioned in the document would be seized by the state.<sup>32</sup>

For our purposes it is important to understand Kirke's policy toward taverns. When Kirke first arrived in Ferryland a large number of seasonal fishermen annually descended upon the 100 or so permanent colonists in the village and in the adjacent Caplin Bay. Similar situations occurred throughout the various smaller settlements located all along the 450 miles of English coastline from Bonavista in the north down to Trepassey; beyond these boundaries were French territories.<sup>33</sup> We do not have specific population numbers for the era before 1660, but for ca. 1660 it is estimated there were about 1,500 residents in all of English Newfoundland and about 6,000 seasonal fishermen. In the 1640s the number of seasonal fishermen would have been about the

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30 Pope, *Fish into Wine*, pp. 132-44 and 273-78. It has been frequently suggested that Kirke took over the infrastructure built by George Calvert and simply used the colony to his own advantage. Pope, pp. 136-37 and 279-82, explains there is truth to this statement and undoubtedly Kirke was ruthless, but he also points out that Kirke did pay for some rebuilding and improvements to the settlement, beyond enlarging his own residence, and that Kirke was successful in expanding the colony and creating some local trade.

31 See Gaulton and Tuck, pp. 218-220. For more on the pipes see footnote 109 below. On the kitchenware, see Stoddard, pp. 49-99, especially 86-87 and on the *terra sigillata*, see Gaulton and Mathias, pp. 1-17. For illustrations and a brief discussion of these items see "Kirke House Artifacts" in the Colony of Avalon website at [http://www.heritage.nf.ca/avalon/tour/pool\\_plantation1.html](http://www.heritage.nf.ca/avalon/tour/pool_plantation1.html) [last accessed December 27, 2005].

32 Pope quotes David Kirke's last will, which is a letter to his brother James: "Deare brother...you knowe all my estate and how it stands...what remains thare [there] I desire may goe to my wife and children." See Pope, *Fish into Wine*, pp. 138-44. In 1651 a group of commissioners, led by the Maine merchant John Treworgy, was appointed by the Commonwealth to oversee the colony of Newfoundland and investigate the actions of David Kirke. Doubtless, in addition to his illegal acts, Kirke's enthusiastic and extensive profiteering of the populace, authorized by a royal monopoly grant, and his conspicuous consumption, made him even more distasteful to the Puritan Commonwealth government in England. It seems the Puritans preferred the Catholic Lord Baltimore to the royalist Kirke.

33 The mileage is based on distances along the coastline roads: from Bonavista to Whitbourne (215 km), Whitbourne to Old Perlican (108 km), Old Perlican to Chapel Cove (112 km), Chapel Cove to Foxtrap (27 km) Foxtrap up the coast to Flatrock (about 55 km) and from Flatrock to Trepassey (173 km) is a total of 690 km or 428.7 miles. A few small peninsulas such as Hinckman's Harbour and Little Heart's Ease are not represented because they lack highways (at least, they do not have any highways represented on the Google maps that were used to derive these mileage figures), thus, the total coastline is probably closer to 450 miles. A direct route from Bonavista to Trepassey, through the center of the main peninsula, rather than along the coastline, is only 346 km or 215 miles.

same but there would have been far fewer permanent residents than in 1660.<sup>34</sup> The seasonal fishermen, spending several months far away from home and family, in a wilderness with few diversions, sought comfort in tobacco, wine and spirits.<sup>35</sup> Indeed, the extent of the smoking and drinking in Newfoundland was reputed to be quite excessive by contemporaries. Tavern service was sought both day and night; during the day, while fishermen were out in their shallops, the shore crews had free time to frequent drinking establishments, then, in the late afternoon, once the daily catch was brought in, the shore crews went to work processing the catch and the fishermen would get a meal and spend the evening drinking and smoking.<sup>36</sup>

Kirke saw the tavern business to be a profitable enterprise that he wanted to exploit to its full potential. The restrictions on taverns expressed as point ten in the Western Charter, issued by Charles I in 1634, did not discourage him. The Charter stated:

Tenthly, That noe person doe set vp any Taverne for sellinge of wyne Beere, or stronge waters Cyder or Tobacco, to entertayne the fishermen, because it is found that by such meanes they are debauched, neglecting thar [their] labo<sup>rs</sup> and poore illgoverened men not only spend most part of their shares [i.e. income] before they come home, vpon w<sup>ch</sup> the life and maintenance of their wife and Children depende but are likewise hurtfull in divers other waies [ways], as by neglectinge and making themselves vnfit for their labour by purloyninge and stealinge from their owners...<sup>37</sup>

Kirke simply dismissed these regulations and, as Cruse stated, "enticed" inhabitants to purchase an annual liquor license at a high cost. Based on the large number of beverage glasses uncovered in the excavation of Ferryland dwellings it appears most houses in the settlement set aside one room as a seasonal tavern; and, as we have seen above, Pope estimated there were about 25 of these taverns or tippling houses throughout the colony of Avalon.<sup>38</sup> Further, we find that Kirke, a longtime wine merchant, took full advantage of his position by gaining a monopoly over the liquor supply.<sup>39</sup> Fishing ship owners from Exeter and Plymouth testified that Kirke "...not

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34 Pope, *Fish into Wine*, pp. 56, 62-63 and 201-2, estimated the total summer migratory population in British Newfoundland during the first half of the century at about 5,000 to 6,000 men and suggests the resident English winter population increased from about 200 in 1630 to about 1,500 in 1660. For a general discussion of the various bays and their relative populations in the 1670s-80s, see Pope, *Fish into Wine*, pp. 311-18.

35 Pope, *Fish into Wine*, pp. 384-85 explains "The relatively new alcohols - brandy, grain spirits or aqua vitae, and the strong sweet wines of Iberia and the Atlantic islands - shipped better than weaker, drier wines or beer. The traditional unhopped English ale did not store, let alone ship, well, and the new, stronger hopped beers only somewhat better." Thus beer was not exported until the development of bottled porter during the eighteenth century. Pope continued, "when planters and fishermen wanted alcohol...they were likely to tap a cask of wine, brandy, or, eventually, rum..."

36 Pope, *Fish into Wine*, pp. 349-93.

37 Matthews, p. 74.

38 Crompton, pp. 24-25, explains a gentry dwelling at St. Mary's, Maryland, contained six beverage cups while 83 beverage cups were uncovered at the site of the St. Mary's tavern. [In Maryland a tavern was called an ordinary. The tavern Crompton referred to is Smith's Ordinary, which was in business from when William Smith completed the building just before his death in 1667 until the Ordinary burned in March 1678; see Miller, pp. 245-47]. In Ferryland the private dwelling in area A contained 70 beverage cups and the private dwelling in area B contained 55 such cups, while a single house about 12 miles further down the coast at Renewes contained only 11 beverage cups. Thus, the quantities of beverage cups at the Ferryland houses was much closer to the quantities uncovered at taverns than it was to the number of beverage cups found in contemporary private houses. Further, so as not to discriminate against large families, we discover the percentage of beverage cups to the total number of drinking vessels is far higher in Ferryland houses, where 25-30% of all vessels are beverage cups, while at Maryland and Virginia houses it is typically 10-15%; alternatively, at full-time taverns beverage cups are about 35-50% of the total number of vessels. Thus, the percentage of beverage cups to all drinking vessels in Ferryland houses is two to three times higher than at houses in other locations and comes close to, but is slightly lower than, the percentage ratios found in full-time taverns. Also see Pope, *Fish into Wine*, pp. 382-93 and p. 140 for the estimate of 25 tippling houses in Avalon.

39 Pope, *Fish into Wine*, pp. 140 and 375.



only licenceth to keepe taverns att severall yearly rents in most of the choyssest fishing ports and harbors, butt furnisheth them with wyne, att his owne rates and prises [prices], to the debauchinge of the seamen....<sup>40</sup> Indeed, Kirke had an even more personal interest in this trade. Archeologist James Tuck explained,

The western room of the [Kirke] house is unusual for its cobblestone floor, something which is rare in seventeenth-century English domestic dwellings... A very shallow drainage channel runs across the floor, through the side passage and outside to the cobbled courtyard. If it were not for the large fireplace, clearly heavily used and containing much domestic refuse, this room might be interpreted as a barn or byre to house cattle. The room might also be interpreted as a kitchen, were it not for the fact that the adjacent stone kitchen room, originally part of the Colony of Avalon, was still in operation. The question as to the function of this room may be partly answered in the 1667 deposition of Thomas Cruse who stated that "Sir David Kirke himself did keep a common tavern in his own house, which did draw and keep ship masters, fishermen and others from their fishing employments."<sup>41</sup>

Thus, Kirke made money annually from the sale of liquor licenses throughout the province, and then made even more money on an ongoing basis as the sole supplier of liquor to these tavern owners. At the same time, Kirke competed with the other Ferryland and Caplin Bay establishments by opening his own tavern.

### Fishermen's pay and the Ferryland economy

James Yonge was a fifteen year-old surgeon who signed on the 100-ton fishing ship *Reformation*, with a crew of 70, spending the summer of 1663 at Renew, Newfoundland, about twelve miles south of Ferryland.<sup>42</sup> Yonge kept a diary, which contains the most detailed surviving account of

40 Quoted in Pope, *Fish into Wine*, pp. 401-2. We do not have a price list detailing what Kirke charged tavern owners for wine, nor do we have the retail prices charged by tavern owners to their customers. As a very general point of reference, a proclamation issued by the Virginia Company Governor, James Wyatt, at James City (Jamestown) on August 31, 1623, lists the maximum allowable retail rates for various commodities. Prices were listed in Virginia money of account, which at that time was still at sterling value, with one option for payment in ready money and a second higher value for payment in tobacco. All drink was listed per gallon as follows: Sack sherry (from Spain or the Canary Islands) and aquavita (strong liquor such as brandy) was 4s in money or 6s in tobacco, while Canary (a light sweet wine), Malaga (a white or red fortified wine from Malaga), Allegant (wine from Alicante), Tent (deep red Spanish wine), Muscadell (that is, sweet Muscatel wine) and Bastard (a mixture of old and new wine) wines were 6s in money or 9s in tobacco. In this same list Newfoundland fish per hundredweight (of 112 pounds) was priced at 15s in money or £1 4s in tobacco, while Canada fish was £2 in money or £3 10s in tobacco. Using the ready money values, the 4s a gallon drinks come to 0.375d per ounce, the 6s per gallon wines are 0.562d per ounce and the Newfoundland fish comes to 0.62d per pound. As the century progressed the value of tobacco declined substantially from the high prices obtained during the initial years of planting, thus the tobacco price rose more quickly than the ready money price. For the proclamation, see Kingsbury, vol. 4, pp. 271-72. In England the price of wine was regulated by royal proclamations, which fortunately survive for the period 1633-42. The maximum retail price per quart of wine, applied proportionally for greater or lesser quantities, was decreed as follows: Canary, Muscadell and Allegant at 12d (1633-37) and then, due to increased taxes, 14d (1638-42); Sack and Malaga at 9d (1633) advancing to 10d (1634-37) and then up to 12d (1638-41) before declining to 11d (1642); Gascon (wine from Gascony), French, Rochel (wine from Rochelle), as well as small and thin wines at 6d (in the proclamation of Feb. 18, 1633, these wines were listed at 5d but revised to 6d on March 22, 1633, and continued at the 6d level through 1637) then rising to 7d (1638-41) before falling back to 6d (1642). See the royal proclamations fixing the price of wines dated: Feb. 18, 1633, March 22, 1633, Jan. 25, 1634, Jan. 20, 1635, Feb. 1, 1636, Jan. 23, 1637, Feb. 8, 1638, Jan. 11, 1639 and Jan. 22, 1642, in Larkin, vol. 2, pp. 371-73, 374-75, 393-95, 447-49, 496-98, 544-46, 591-94, 646-48, 699-710 and 760-62.

41 Gaulton and Tuck, pp. 214-15 for the quote with additional information and a photograph of the house excavation on pp. 212-13.

42 Yonge stated that he was born in Plymouth on February 27, 1647/8. At nine years old he was placed in the Latin School, where he studied for two years (presumably while he was nine and ten) before being apprenticed to Silvester Voysy, surgeon of the *Constant Warwick*, under the command of Captain Robert Voysy. After "almost 5 years" James Yonge returned home. In February 1662/3 his father signed James to be the surgeon "of the *Reformation*, Mr. Wm Cock, commander, 70 men 3 guns, 100 tons, bound for Newfoundland." The ship departed Plymouth February 24 and landed at Renew on April 4. Yonge, *Journal*, pp. 27 and 53-55.

daily life in the fishery during that era. Regarding money and payments Yonge explained that most crewmen were remunerated with a share of the catch at the end of the season in lieu of a predetermined salary, although some individuals received a bonus or supplement in addition to their share. For example, processing cod was a dangerous job requiring skill and stamina, because thousands of fish were prepared each day. Crewmen called "headers" initiated the processing of the daily catch by decapitating and gutting the cod; these workers received one share of the catch plus a bonus of £1. The gutted fish were then sent down the line to the more expert workers called "splitters," who skillfully and quickly filleted the cod, that is, cut them through the center and removed the bones. Yonge certainly must have overestimated their efficiency, for he stated they typically working at a rate of 24 score of cod (that is, 480 fish) per half-hour, which comes out to 3.75 seconds per fish! These men were offered one share of the catch plus £3 to £4. At the other end of the pay scale, unskilled deck hands, who were usually boys or young teenagers learning the profession, did not participate in the shares, but only had a small salary in the range of £1 to £2. Yonge stated:

The men in these voyages have no wages but are paid after this manner: the owners have two thirds and the men one third; this one third is divided into so many shares as there are men in the ship. Now, tho some men have money above the share from the master, yet others have much less, so that I believe in our ship the master might have 9 shares clear, the mate 2 shares and 40d, splitters 1 share and 3 or 4 pounds [i.e. £3 or 4], header 1 share 20d, salter 5 pounds [i.e. £5], sometimes less, boat's master 1 share and 6 or 7 pounds [i.e. £6 or 7], midshipman 1 share and twenty or 30 shillings, foreshipman 3 pounds [i.e. £3], or half a share and ten shillings, boys, lurgens [hands] and such: 20d, 30d, or 40d.<sup>43</sup>

Details on how the surgeon was paid shed additional light on the situation. We learn Yonge received one share plus a bonus of between £5 and £9 along with a half-crown out of each crewman's share and an additional bonus of 100 dried cod. Yonge explained,

The manner of paying the chyrurgeon [surgeon] is this: the owners give 5, 6, 7, or 9 pounds [i.e. £] on the hand towards the chest, the master gives him a share, and every man half-a-crown [2s 6d], out of his share, besides which he has one hundred of poor Jack [dried cod fish] from the whole.<sup>44</sup>

The half-crown out of each crewman's share does not mean Yonge was actually paid in silver by each crewman, but rather, it was a bookkeeping tally entitling him to receive so much from the value of each crewman's share to be deducted once the catch was sold. It is unknown if the other supplementary amounts mentioned by Yonge referred to actual money or simply to value. That is, were the supplements handed out in coin before the start of the voyage as a bonus for signing on, or did they refer to additional remuneration to be added to the share at the end of the voyage? Yonge's statement that the surgeon's supplement was paid by the owners of the vessel "on the hand toward the chest" suggests it was credit on account rather than in cash.<sup>45</sup> But that payment, of between £5 and £9, represented a far more substantial sum than was offered to the other members of the crew and, unlike the other supplements, was not paid by the captain, whom

<sup>43</sup> Yonge, *Journal*, p. 58.

<sup>44</sup> Yonge, *Journal*, p. 58.

<sup>45</sup> The wording here is obscure. The word "hand" has many different, and sometime conflicting, meanings. The *Oxford English Dictionary Online*, second edition, lists 65 different definitions for hand, many with several subsections. The most likely meaning in this instance is listed as definition 25, item g, where "on the hand" is a 17th century phrase meaning "on the account." We should not infer the phrase is an older form of our current idiom "on hand" and therefore assume the phrase means nearby or readily available. The second half of the phrase is more straightforward, as we would expect, the *OED* confirms that "toward the chest" means "with regard to the coffer or treasury," thus, the full phrase means the funds were paid on account with regard to the company's treasury; hence, it was company credit.

Yonge called the master, but rather, it was paid by the owners of the ship. Thus, it differed significantly from the other crew supplements. The far smaller supplements negotiated with the captain may have been disbursed in a very different manner than the surgeon's supplement. However, even if the seamen obtained their supplements as a bonus in coin before the voyage commenced, we do not know if the money was deposited with family members at home or taken with the sailors on the voyage. It seems some small amount of silver may have entered Newfoundland by way of the seasonal fishermen, but for the most part the fishermen used credit. For example, fishing crews lacking a surgeon would make an agreement with a surgeon from another crew, who would be paid in fish at the end of the season. Yonge explained,

Now the manner of this country is, for those that have no chyrurgeon to agree with one, and give 18d., 20d., or 2s. per man for the season to look after their men, which the masters pay in fish at the end of the summer...<sup>46</sup>

From the Western Charter of 1634, quoted above, we learned that in order to acquire alcohol and tobacco many fishermen "spent most part of their shares before they come home." This strongly suggests the fishermen purchased these goods on credit and that the creditor was paid before the fisherman received his remuneration. Indeed, in 1708 the crew of the fishing ship *Beginning* went on strike when the captain refused to extend credit against future wages.<sup>47</sup> The point I wish to make here is that regardless of whether the remuneration was in shares or fixed wages, it appears these funds were available as credit during the voyage, but were not paid to the individual in silver or some other form of money, such as a bill of exchange, until the end of the voyage, once the catch was sold. During the voyage the fishermen had a promise of shares or wages, which could be used as credit. Possibly a few of the more senior staff had some supplement or bonus, which they may have brought with them as coin, but for the most part the seamen used credit.

In general, transactions in Newfoundland did not include the exchange of silver; this was true for purchases made by either the seasonal fishermen or the permanent colonists. Payments by Newfoundland residents for products acquired from Massachusetts, Virginia and English merchants importing goods to Newfoundland took the form of bills of exchange or, more commonly, credits for fish. Thus, a Massachusetts or Virginia merchant would typically return home with a shipment of salted cod that he had received as payment for the goods he had sold in Newfoundland. However, there indeed was some coinage in circulation. Although it was technically illegal to export silver or gold out of England, it is clear, from the recovery of English silver at archeological sites of early Newfoundland settlements, that a few coins found their way out of the county in the pockets of sailors and colonists. It is also possible some silver was brought

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<sup>46</sup> Yonge, *Journal*, p. 56

<sup>47</sup> Pope, *Fish into Wine*, pp. 165-66, mentioned, "The mate and crew of the *Beginning* of Salem, Massachusetts, which fished at Caplin Bay, near Ferryland, in 1708, did not expect to be paid until the end of their voyage, but they were prepared to strike to insist on their right to be allowed advances in alcohol and tobacco against wages expected." This quote was used in the context of a discussion regarding a gradual shift away from shares and toward fixed wages for fishermen during the latter half of the century. Pope explained some economic historians have suggested local Newfoundland fishermen, often called "planters" or "boat keepers" hired assistants to work for wages rather than shares and that one study even credited David Kirke with instituting this shift thus making the fishery a capitalist enterprise. Pope stated that this theory was "...appealing in its simplicity and often accepted as authoritative. There is, however, no direct evidence that Kirke himself paid fishing servants on a wage basis, let alone that he introduced this mode of production to the Newfoundland fishery. A gradual shift to wages was certainly under way in the seventeenth century, but whether this transformation was a result of the development of the boatkeeping sectors of the fishery remains an open question." See Pope, *Fish into Wine*, pp. 161-67 with the quote on pp. 163-64. During the seventeenth century fishermen were typically paid in shares, sometimes with a supplement or bonus and occasionally with the privilege of portage, that is, the right to haul a certain quantity of their own freight, namely fish, in the ship's storage bay without cost. Unskilled workers were simply offered a fixed wage and, on occasion, fishermen worked for a wage rather than a share, as explained in Pope, *Fish into Wine*, pp. 168-93. However, regardless as to whether they received a share or a wage, payment did not occur until the end of the voyage.

to Newfoundland via the sack or trading ships, both English and foreign, which came to purchase shipments of dried fish that were ready for transport to market. Further, New England merchants such as Joseph Buckley of Boston, who, on several occasions brought finished goods to sell in Newfoundland for bills of exchange or credit for fish, may have taken some pocket change with them to purchase food and drink during their stay.<sup>48</sup>

### Coins circulating in Ferryland to ca. 1650

In 2002, Paul Berry, Curator of the Currency Museum of the Bank of Canada, published a very useful report documenting the coins recovered in the archeological excavations at Ferryland through the 2001 season. His research can be used to help understand the coinage situation during the era of David Kirke. The small village of Ferryland has been continuously inhabited from Lord Baltimore's initial colonization in 1621 up to the present, therefore, among the 92 numismatic items uncovered during the excavation are coins from all periods; the earliest is a colonial era Ferdinand and Isabella one-half real of 1497-1504, while the latest is a Newfoundland five-cent coin of 1943. Since Kirke was removed from Newfoundland in 1651, excavated coins minted after the mid-seventeenth century necessarily reflect items that postdate the Kirke era and thus are less relevant to the present study. In this section I shall concentrate on recovered coins that were originally minted before 1650 for insights into their archeological context. I am especially interested in determining information related to the quantity of small change circulating in Ferryland during Kirke's era and if there was a need for a lead token emission.

Ferryland was first settled under the auspices of George Calvert between 1621 and 1629. Therefore, we can reasonably assume that European artifacts recovered from the Ferryland excavation had not been lost, discarded or disposed until some point after the initial contingent of twelve settlers arrived in 1621. Archeologists typically reflect this dating parameter in reports by assigning recovered items an outside (or *terminus ante quem*) date of ca. 1621, that is, the artifacts were deposited no earlier than 1621. Sometimes, the archeological context of a recovery allows us to also assign a date by which when we can be reasonable assured the artifact had been deposited (a *terminus post quem*). In these instances we have parameters that allow us to surmise an artifact was lost or discarded at some unspecified time between these two dates, namely not before ca. 1621 and not after the terminal date. The terminal deposit date for recovered Ferryland coins minted prior to 1650 fall into four groupings or categories based on the archeological context of the artifacts. Three of these groupings relate to pre-1650-minted coins that could have been lost during the first half of the seventeenth century and thus are significant for our purposes. The fourth grouping relates to pre-1650-minted coins recovered in a later, eighteenth century, archeological context and therefore will be less noteworthy for information regarding coins circulating during the era of David Kirke.

In a few locations within the excavation we are very fortunate to be able to firmly date Ferryland artifacts to the second quarter of the seventeenth century, which spans the period from Calvert's initial colonization (1621-29) through the era of David Kirke's administration (1638-51). The midden of the blacksmith shop contains large quantities of clay pipe fragments and many shards of bottle glass. A detailed examination of the individual fragments has revealed all the pipe fragments represent stems and bowl sections from small bowl pipes, a style that was replaced by the wide bowl pipe after mid-century. Also, all the glass shards are from square glass bottles; again, this design was replaced at mid-century with what are called the round "onion" or "globe" shaped bottles. The evidence suggests the blacksmith shop was taken down by ca. 1650 and thus it can be inferred that artifacts from the shop midden were deposited there before mid-century.<sup>49</sup> The brewhouse-bakery midden also exhibited a similar limitation to pre-1650 pipe and

48 P. Berry, pp. 3-8.

49 Tuck, p. 30, Carter, pp. 86-90, Gaulton and Tuck, pp. 194-97 and Wicks, p. 98.

glass fragments. Additional archeological evidence demonstrates Kirke demolished the brewhouse-bakery in order to enlarge his private residence, an event that occurred in the early 1640s.<sup>50</sup> Thus, for these two locations and a few other areas within the excavation, we are able to determine from archeological evidence that the artifacts from these sites were deposited between ca. 1621 and ca. 1650. Therefore, we can be fairly certain that the artifacts uncovered in these areas were actually used in Ferryland before 1650.

The coins recovered from this first category or grouping of areas in the excavation, namely those locations where the artifact deposits are datable to pre-1650, consist of three English pieces: a silver penny of James I, a threepence of Elizabeth I and a one-fifth section of a gold quarter-laurel of James I; an Irish shilling of James I; two French doubles *tournois*;<sup>51</sup> the Spanish half-real of Ferdinand and Isabella mentioned above and a very worn Dutch *bezemstuiver* (billion). Additionally, two Nuremburg jettons of Hanns Krauwinkel II, produced between 1586 and 1635, were found in these deposits. These items are listed in Chart I.

In addition to the eight coins and two jettons recovered in a pre-1650 archeological context, there are other recovered coins minted before 1650 found in areas that do not allow for a precise pre-1650 dating parameter of their archeological context. On September 21, 1696, an armada of nine French ships under the command of Governor de Brouillon landed in Ferryland, sacking and burning the village to the ground. This catastrophe is a boon to archeologists because deposits below the burn layer can be dated to a period before 1696. Since many parts of the small colony were continuously inhabited from the 1620s until 1696 all we are able to state as to the dating of artifacts from these portions of the excavation is that the recovered items were deposited sometime between ca. 1621 and 1696. It is quite likely some artifacts uncovered in these areas represent items that were deposited prior to 1650, but there is no definitive archeological context to narrow the outside dating parameter of these recoveries to some specific period before the destruction of the colony in 1696. For example, the Kirke family lived in the renovated mansion house from ca. 1640 to 1696. The items recovered from the house midden include artifacts that may have been lost at any time during this period. In regard to coinage we can sometimes narrow the dating parameter based on the year a coin was minted. Certainly, the James II gun money shilling minted in December 1689, found in the Kirke midden, is a late seventeenth century deposit; that is, it was deposited after it was minted in 1689, but before the destruction of the house in the raid of 1696. However, the milled Scottish twenty pence coin of Charles I, from his third coinage of 1637-42, found in the same midden, could have been lost before 1650, or, it may have been lost at a later date; a similar situation is true for the 1641 and 1643 French doubles *tournois* uncovered in that midden. The archeological context can only prove that these coins were deposited at some point prior to 1696. Thus, it is possible the Scottish coin and the two French doubles *tournois* circulated in Ferryland before 1650, but it is also possible the coins did not enter Ferryland until after mid-century. Overall, there are sixteen coins that were minted before 1650, found in an archeological context that cannot be more accurately defined than stating they were recovered from an area dating between ca. 1621 and 1696. These coins may have been lost at any point during the occupation of the site. Several of these pre-1650-minted coins may have been in circulation in Ferryland prior to 1650; however the archeological context does not allow us to limit the dating of the deposits, except to say that they were certainly lost before 1696.

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50 Gaulton and Tuck, pp. 197-99 and 211-16. It is not known if the blacksmith shop or the brewhouse-bakery had closed or if they were still in operation up to the time they were demolished.

51 A double *tournois* is a two deniers copper; it has a diameter of 20 mm and weighs 48.4 grains, which is about the same diameter as a Maltravers oval patent farthing but is five times heavier. On the Maltravers ovals of 1634-36 (at 18 mm and 9 grains in weight), see Peck, p. 72.

**Chart I: Coins found in a pre-1650 archeological context**

<i>Item</i>	<i>Berry item #</i>	<i>Coin</i>	<i>Comments</i>	<i>Sterling value</i> <sup>52</sup>
1	86	Jetton, Nuremburg HEIT legend (Mitchiner, <i>Jetons</i> , vol. 1, nos. 1574-79)	Copper, Hanns Krauwinckel II 1586-1635, area B, event 154, from the blacksmith shop floor.	
2	87	Jetton, Nuremburg GLVCK legend, (Mitchiner, <i>Jetons</i> , vol. 1, nos. 1509-11)	Copper, Hanns Krauwinckel II 1586-1635, area F, event 530, the midden behind the brewhouse/bakery. <sup>53</sup>	
3	41	Double tournois, France, Henry IV	Copper, dated 1608, from area F, event 367, the brewhouse/bakery midden.	0.15d <sup>54</sup>
4	47	Double tournois, France, provincial issue of Maximilian I of Bethune, ruler of Boisbelle and Heinrichmont	Copper, the issue dates 1636-41; with this specimen resembling varieties from the 1630s. Found in area F, event 370, the refuse associated with the destruction of the brewhouse/bakery and the expansion of the Kirke mansion.	0.15d
5	68	Bezemstuiver, Netherlands, probably Friesland	Billon, well-worn, from area G, event 331.	1d <sup>55</sup>
6	7	Penny, England, James I	Silver, of 1603-04, refuse heap from area F, event 480.	1d
7	4	Threepence, England, Elizabeth I	Silver, well-worn, from area B, blacksmith shop refuse.	3d

52 These are sterling equivalents based on a proclamation of Charles I, dated March 4, 1644, from Oxford, raising the rates of foreign coins; see Larkin vol. 2, pp. 1006-7 and the 1640 essay to Parliament by Ralph Knight explaining the need for increased values, especially Knight, pp. 20-28. Charles's proclamation increased the rates for foreign coins to their full intrinsic value, very close to the values later assigned during the assays of Newton. The proclamation included the following coins, weights and values: the 420 grains eight reales and the 432 grains cross dollar are listed at 54d, which was up 2d from the previous rate of 52d; the Spanish Netherlands ducatoon of 500 grains is valued at 66d; the Imperial Rix dollar of 444 grains at 56d; the French silver quart d'écu of 150 grains at 18d; the Dutch Double Rider, probably the 14 gulden golden rider, defined as equal in weight to 22s of James I, and valued at 258d (21s6d); and a "Spanish Double Pistoll," that is, a gold two escudos, of 104 grains at 180d (15s). At this time, the Civil War was underway so the King's proclamations were not always followed in Parliamentary territory such as London; it is unknown if these values were followed by the Royalist Kirke in Newfoundland. However, because the rates closely represent intrinsic sterling value I have used them in the charts I present when converting foreign coins into sterling. The difference in using the older values or the raised values is minimal in relation to small change. At the earlier value of 52d per eight reales, the four maravedis would be equivalent to 0.76d while at the higher 1644 rate of 54d per eight reales it equals 0.79d; in either case it is likely the coin was "advanced" in value and passed at a penny in Newfoundland. It should be noted, the Commonwealth of Massachusetts Bay in the General Court session of June 14, 1642, started "crying-up" or advancing the value of silver coinage above the sterling rate. Coinage was advanced just under 7.7%, raising an eight reales by 4d from 52d to 56d; three months later the eight reales was advanced another 4d to 60d (5s). Before 1642, coinage in Massachusetts passed at the same rate that it did in London, see Jordan, *John Hull*, pp. 167-68.

53 On the two jettons in addition to the Berry entries, see Gaulton and Tuck, p. 199. Ninety-nine jettons were recovered from structure 195 at Fort James, Jamestown, Virginia; many were Hanns Krauwinckel II jettons; see Kelso and Deetz, 2001, p. 18 and figures 15 and 26 on pp. 19 and 30.

54 Based on the Louis d'argent of 60 sols at 54d, the double tournois would be valued at 0.15d or just 0.025d over one-half farthing.

55 The Dutch stuiver is a billon coin equal to 8 copper duits which traded at one-half farthing, valuing a stuiver at 1d, see Mossman, p. 67.

Chart I: Coins found in a pre-1650 archeological context (cont'd)				
Item	Berry item #	Coin	Comments	Sterling value
8	54	Half-real, Spain, Ferdinand and Isabella	Silver, from 1497-1504, found in area G, event 322, feature 80.	3.375d <sup>56</sup>
9	90	Shilling, Ireland, James I	Silver, martlett privy mark dating the specimen to 1604-05, found in area F, event 347, the lowest layer of the defensive ditch.	9d <sup>57</sup>
10	6	Quarter-laurel, England James I, cut section	Gold, 1619-1625, one-fifth section (6.8 grains), found in area G, event 574.	1s

The pre-1650-minted coins found in a ca. 1621-1696 archeological context include: two English coins, namely, a counterfeit groat of Elizabeth I and a clipped shilling of Charles I, a Scottish 20 pence piece of Charles I, four specimens of French doubles tournois and two douzains, a Spanish eight maravedis copper and an eight reales cob, three Portuguese coins at 60, 100 and 120 reis, a cut section of a Netherlands six stuivers and two examples of two stuivers coins as well as two unidentified basal state copper disks and one unidentified basal state lead disk. Thus, there are up to twenty additional recovered coins that possibly circulated in Ferryland before 1650. These items are listed in Chart II.

Chart II: Coins minted before 1650 found in a pre-1696 archeological context				
Item	Berry item #	Coin	Comments	Sterling value
1	76	Unidentified copper disk	Basal state, 20.8 mm in diameter, weighing 53.2 grains. Found in area B, event 143, a late 17th century context near the blacksmith shop.	
2	77	Unidentified copper disk	Heavily corroded, 23.5 mm in diameter, weighing 60.2 grains. Located in area F, event 303, a late 17th century fill layer.	
3	84	Unidentified lead disk	Basal state, possibly an Elizabethan provincial token or medal or a foreign jetton. <sup>58</sup> It is 31.8 mm in diameter, weighing 166.7 grains. Recovered from area F, event 287, the Kirke mansion midden.	

56 The English rate for an eight reales was 54d (4s6d), putting the half-real at 3.375d; see footnote 52 above.

57 In addition to the Berry entry also see Tuck and Gaulton, p. 99. The exchange rate was at £133.33 Irish to £100 sterling, as established by James I on October 11, 1603, see McCusker, p. 34, Ruding, vol. 1, pp. 361-64 and Colgan, pp. 103-5, hence the 9d valuation. In the October 1603 proclamation, Irish silver from Elizabeth I was devalued by 2/3rds and then, on January 22, 1603/04, by 3/4ths its face value, except for Elizabeth Irish copper pence and halfpence, which retained their face value, but which were limited to a maximum of 4d in coppers per transaction.

58 P. Berry, item 84 on p. 63 suggests this basal state lead disk at 31.8 mm in diameter and 10.8 grams (166.7 grains) might be a seventeenth century lead English merchant token because some of those tokens had a rather simple design and "are known to approach the Ferryland piece in size." In fact, most lead English merchant tokens of the seventeenth century are in the range of 12 to 22 mm in diameter; see Mitchiner, "English Tokens: c. 1425 to 1672." Some Elizabethan jettons, at 29 mm, more closely approach the diameter of the Ferryland disk, but at 5 grams, they are only about half its weight; see Mitchiner, *Jetons*, vol. 3, pp. 1632-37. A specimen of a medal depicting a phoenix, struck in honor of the accession of Queen Elizabeth, was uncovered in Jamestown; this object is 29 mm in diameter but, again, like the jettons, only weighs 5 grams. It is made of tin, but contains a 40% lead content, and is often cataloged as a lead token; see Mitchiner, *Jetons*, vol. 3, p. 1609 and Kelso, p. 57. This example proves such commemorative tokens sometimes found their way to America, but it is clear from its weight that the Ferryland artifact must be a different variety. A few Elizabethan provincial tokens are closer in size to the Ferryland piece, such as

**Chart II: Coins minted before 1650 found in a pre-1696 archeological context (cont'd)**

<i>Item</i>	<i>Berry item #</i>	<i>Coin</i>	<i>Comments</i>	<i>Sterling value</i>
4	45	Double tournois, France, Louis XIII	Copper, dated 1614, from Paris, mintmark A. Area F, event 509, a back drain north of the kitchen in the Kirke residence.	0.15d
5	46	Double tournois, France	Copper, obverse basal state, reverse well-worn, dated 164-, possibly 1643. Found in area F, event 287, the Kirke mansion midden.	0.15d
6	48	Double tournois, France, provincial issue by Gaston Usufrutier of Dombes in Provence	Copper. dated 1641, from area F, event 287, the Kirke mansion midden.	0.15d
7	83	Double tournois, France	Copper, basal state, fleur-de-lys are visible in x-ray image. from area F, event 475, the floor of the parlor in the Kirke residence.	0.15d
8	42	Douzain, France, probably Louis XIII	Billon, well-worn, possibly counterfeit. Recovered in area F, event 290. The douzain (later sol or sou) was equal to twelve deniers, with a sterling value of 0.9d and probably circulated as a penny.	0.9d <sup>59</sup>
9	80	Douzain?, France?	Billon or Silver, a heavily encrusted disk that appears to be a douzain but could be a clipped English coin. Found in area F, event 290.	0.9d?
10	67	Six stuivers, Netherlands, 161-, cut section	Silver, a worn and cut fragment weighing 20.8 grains. Found in area F, event 287, the Kirke mansion midden.	1d
11	40	20d, Scotland, Charles I	Silver, minted 1637-1642, found in area F, event 287, the Kirke mansion midden. Scottish coinage was valued at one-twelfth of English during this era, thus the Scottish 20p was equal to slightly more than 1.5d sterling. The coin is about the same size as a Charles I English halfgroat (i.e. a 2d coin) and probably traded at that rate.	1.5d <sup>60</sup>

Mitchiner, "English Tokens: c. 1425 to 1672," p. 122, item 20, at 27 mm and 8.38 grams and item 21, at 26 mm and 9.72 grams. The Ferryland disk is also similar in size to a lead Amsterdam token dated to 1639 that is 33 mm in diameter with a weight of 18 grams; an example of this token was uncovered in East Anglia; see Mitchiner, *Jetons*, vol. 2, p. 926, item 2880. In summary, the basal state Ferryland lead disk has not been identified as equal to any known lead token. It is certainly large, both in diameter and in weight, and because it is well-worn, it was probably somewhat heavier at the time of issue than in its current condition. The diameter is much wider than any seventeenth century English merchant token and although a few Elizabethan jettons approach the width they are only half the weight of the Ferryland disk.

59 The douzain (later sol or sou) was equal to twelve deniers, with a sterling value of 0.9d and probably circulated as a penny.

60 Scottish coinage was valued at one-twelfth of English during this era, thus the Scottish 20p was equal to slightly more than 1.5d sterling. The coin is about the same size as a Charles I English halfgroat (i.e. a 2d coin) and probably traded at that rate.



**Chart II: Coins minted before 1650 found in a pre-1696 archeological context (cont'd)**

<i>Item</i>	<i>Berry item #</i>	<i>Coin</i>	<i>Comments</i>	<i>Sterling value</i>
12	56	Eight maravedis, Spain, Philip IV	Copper, minted 1636-64, recovered in area F, event 357, a refuse layer associated with the Kirke mansion.	1.58d <sup>61</sup>
13	65	Two stuivers, Netherlands, Zeeland	Silver, well-worn with only 16 remaining from the date, series produced 1614-1678. Located in area D, event 96, a planter's house.	2d
14	91	Two stuivers, Netherlands, Overijssel	Silver, well-worn, dated 1619. Located in area C, event 44, refuse outside a barn.	2d
15	3	Groat, English, Elizabeth I	Silver, counterfeit coin dated 15—, recovered in area F, event 540, a small midden.	2d
16	63	60 Reis, Portugal	Silver, a 50 reis (one-half tostad) coin revalued with a counterstamp to 60 reis according to an edict of February 1642. Found in area F, event 294.	5d <sup>62</sup>
17	61	100 Reis, Portugal, probably Philip II	Silver, a 100 reis coin issued between 1598 and 1621 or possibly later. Recovered from area F, event 287, the Kirke mansion midden.	8.5d
18	9	Shilling, England, Charles I	Silver, worn and clipped down so that the legends are missing, 28.8 mm in diameter, weighing 72 grains; equal to a full weight Massachusetts Bay shilling or 9d sterling. Possibly a post-1652 deposit that arrived via New England. Recovered in area D, event 123, a planter's house.	9d
19	62	120 Reis, Portugal	Silver, a 100 reis (one tostad) coin revalued with a counterstamp to 120 reis according to an edict of February 1642. Found in area C, event 77.	10d
20	59	Eight reales, Spanish-American, Philip II to Philip V	Silver, a well-worn cob at 405.9 grains, essentially at 17 pennyweight. Found in area F, event 540.	4s6d <sup>63</sup>

After sacking and burning Ferryland in 1696, the French imprisoned the wealthier colonists, from whom they thought they would be able to extract a ransom.<sup>64</sup> The victors then deported the remaining settlers to England, where the displaced refugees spent the winter in Appledore, near Bideford in Devon or about ten miles down the coast in Barnstable. Undaunted by their plight, the following spring they returned to Ferryland to rebuild the colony. The Ferryland site continued to be inhabited throughout the eighteenth century and into the present, with a current population of

61 There were 34 maravedis to the real, thus, at 54d (4s6d) sterling per 8 reales, the maravedi was just about 0.2d, making the eight maravedis about 1.6d, possibly passing at 2d.

62 The 2,000 reis coin was valued at 166d, thus the 60 reis would be valued at 5d, 100 reis at about 8.5d and 120 reis at 10d; see Mossman, p. 74, under the Moidore series.

63 See footnote 52 above for the use of 4s6d (54d) rather than the earlier valuation of 52d. However, in North America full weight was defined to be 17 pennyweight (408 grains), while in England full weight was defined at 17.5 pennyweight (420 grains). Starting in late 1642, a 17 pennyweight eight reales traded at 5s in Boston; see Jordan, *John Hull*, pp. 156-68.

64 The captured colonists were imprisoned at Placentia in Newfoundland. Three of Kirke's children (David, Jr., George and Philip) were captured and died in captivity.

about 750 inhabitants. Indeed, there are residential houses right next to the areas being excavated. A defensive ditch created during the initial years of occupation was first located and uncovered in 1996 because, until that time, the land had been the site of a residential house. Once the property owners died, the land was acquired for the excavation.<sup>65</sup> This post-1696 habitation presents a third archeological dating category for our consideration. Namely, excavated areas that date back to the first decades of colonization but without an archeological context allowing us to determine any outside, or *terminus post quem*, parameter. These areas are primarily plough zones, where the land was turned up year after year so there are mixed deposits without datable layers. For example, in plough zone area D, event 61, a sixpence of Elizabeth I dated 1579 was uncovered as was an Edward VII Canadian large cent of 1903. The sixpence may have been deposited before 1650, but we have no archeological context that can be used to exclude any period up to the present. All we can say with certainty is that the sixpence was deposited sometime after the colony was founded in 1621 and the large cent sometime after it was minted in 1903. Certainly Elizabethan and other hammered coinage went out of circulation, for the most part, during the English recoinage of 1696, strongly suggesting the Elizabethan sixpence was lost during the seventeenth century, but there is no archeological context to verify this.

In all there are twelve coins and one jetton that were minted before 1650, which have been recovered from disturbed and mixed deposits. These coins are: an Elizabeth I threepence and two sixpence, a Charles I shilling, an Irish sixpence of James I, four French doubles tournois, a Spanish four maravedis and two specimens of eight maravedis coppers and one well-worn disk tentatively identified as a German jetton of the sixteenth or seventeenth century. In all, they represent a total of 12 additional coins and one jetton that may have circulated in Ferryland prior to 1650. These items are listed in Chart III.

**Chart III: Coins minted before 1650 found in an undateable archeological context**

Item	Berry item #	Coin	Comments	Sterling value
1	88	Jetton, German	Copper, basal state obverse and very well-worn reverse. Thought to be a German jetton of the 16th-17th centuries. Found in area C, event 0, a plough zone.	
2	44	Double tournois, France, Louis XIII	Copper, well-worn, found in area F, event 287, a disturbed layer.	0.15d
3	53	Double tournois, France	Copper, very well-worn, possibly a provincial issue, found in area G, event 327, a plough zone.	0.15d
4	79	Double tournois, France	Copper, well-worn and corroded, size and weight of a double tournois. Found in area B, event 230, a disturbed layer.	0.15d
5	82	Double tournois, France	Copper, basal state, size and weight of a double tournois. Found in area C, level 1, a plough zone.	0.15d

<sup>65</sup> In 1995, following the death of the resident owners, Arch and Veronica Williams, the Department of Tourism, Culture and Recreation purchased the house and land from the heirs of the estate. Soon thereafter the house was demolished and the property was excavated. The location is now referred to as excavation area F, which was first explored in 1996-97; see Carter, Gaulton and Tuck, pp. 52-62.

**Chart III: Coins minted before 1650 found in an undateable archeological context (cont'd)**

<i>Item</i>	<i>Berry item #</i>	<i>Coin</i>	<i>Comments</i>	<i>Sterling value</i>
6	55	Four maravedis, Spain, Philip III	Copper, worn with date of 160-, putting the coin between 1600 and the end of the series in 1602. Recovered in area G, event 1, a plough zone.	0.79d <sup>66</sup>
7	57	Eight maravedis, Spain, Philip IV	Copper, minted 1636-64, clipped down to 20.7 mm and 60.2 grains. Recovered in area F, a surface find. A similar unclipped example, at 28 mm and 80 grains, discussed above in table 2, was uncovered nearby in a refuse layer associated with the Kirke mansion, area F, event 357.	1.58d
8	78	Eight maravedis, Spain	Copper, basal state with corrosion, approximate size of an eight maravedis at 27.4 mm, but lightweight at 53.9 grains, possibly due to porosity. Recovered from area C, event 0, a plough zone.	1.58d
9	5	Threepence, England, Elizabeth I	Silver, well-worn, dated 15—, either first series of 1561-77 or second series of 1578-82. Found in area F, event 283, a mixed deposit.	3d
10	37	Sixpence, Ireland, James I	Silver, first issue of 1603-04. Surface find in area F (no event).	4d
11	1	Sixpence, England, Elizabeth I	Silver, 157-, clipped so that no legend remains. Found in area G, event 1, mixed deposit dredged from the pool.	6d
12	2	Sixpence, England, Elizabeth I	Silver, 1579. Recovered from area D, event 61, a plough zone.	6d
13	10	Shilling, England, Charles I	Silver, 16—. From area G, event 327, a plough zone.	12d

Finally, in the fourth grouping, are five additional coins minted prior to 1650 that were found in an archeological context dating to the eighteenth century. Archaeological context is a good method for dating the general time period during which artifacts were lost, but it is not the last word on the matter. For example, a Charles II farthing, minted between 1672 and 1679, was uncovered in area G, event 331, which consists of refuse scatter from the first half of the seventeenth century, that is, refuse from 1621-1650. Clearly, the Charles II farthing is about a quarter of a century too recent to be located in such a context. Paul Berry suggested, "...this piece may have intruded upon the event through the action of rodents."<sup>67</sup> Similar unusual actions, including frost heaves or erosion, could be responsible for the location of all five pre-1650-minted coins that were found in an eighteenth century archeological context, especially since all these coins were recovered in refuse

<sup>66</sup> There were 34 maravedis to the real, thus, at 54d (4s6d) sterling per 8 reales, the maravedi was just about 0.2d, making the four maravedis about 0.8d, possibly passing at 1d, while the eight maravedis, at almost 1.6d, possibly passed at 2d.

<sup>67</sup> P. Berry item number 14, on p. 31.

or fill layers.<sup>68</sup> However, due to their later archeological context, it is possible these items represent older coins that circulated and were lost during the eighteenth century; therefore, I have not included these five pre-1650-minted coins in my totals of coins that may have circulated in Newfoundland before 1650.

We see that the eight coins and two jettons listed in Chart I, recovered in a datable archeological context, represent a conservative minimum number of uncovered coins that circulated in Ferryland before 1650. We can increase the sample by including the nineteen coins and one lead jetton minted prior to 1650 listed in Chart II, which represent items discarded sometime before 1696. If we also add the pre-1650-minted coins from the disturbed areas listed in Chart III, which lack any outside dating parameter, we have an additional twelve coins and one jetton. Thus, in addition to the ten items proven by their archeological context to have been in circulation and lost in Ferryland before 1650, it is possible as many as 33 other items found at the site may have circulated in Ferryland prior to 1650, bringing the total up to as many as 43 coins and jettons.<sup>69</sup> In regard to these totals it is important to remember that the current report on recovered coinage only surveys artifacts found through 2001, which includes recovered items from just a small portion of the entire site. Many new discoveries will undoubtedly be made as the excavation continues.

The archeological evidence demonstrates a modest quantity of coinage was in circulation in Ferryland during the era of Calvert and Kirke, a mix of English, Irish and French coins with some Spanish, Portuguese, Dutch and an occasional Scottish coin along with a few German jettons. Of the eight coins and two jettons proven to have been in circulation before 1650, we find English, Irish, French, Spanish and Dutch coins, with the only varieties found in more than one specimen being the French copper double tournois, with two examples and the two jettons from the shop of the prolific jetton maker Hanns Krauwinckel II of Nuremberg. Jettons, or counters, were commonly used by semi- or illiterate shopkeepers to assist with computations and transactions.<sup>70</sup> That the two jettons were uncovered in different locations may indicate they each represent an errant counter lost from two different sets of Hanns Krauwinckel II counters, or, it may indicate they circulated individually as farthing tokens, as was the case in early Stuart England.<sup>71</sup> Quite possibly these jettons may have served a dual purpose. Indeed, the Crowned Rose lead jetton series produced in London from 1603 until 1614, terminated in conjunction with the king's proclamations of 1613 and 1615 prohibiting further emissions of token farthings. Although these items were technically counters rather than tokens, Mitchiner explained, "the distinction was probably to some extent academic. The Crowned Rose counters were probably also used by some persons as 'farthing tokens' just as the small leaden 'farthing tokens' of the period were probably sometimes used by merchants for casting their accounts (i.e. as counters)."<sup>72</sup> In this context it is significant to note that a lead disk was uncovered in the Kirke midden, suggesting

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68 A hammered James I penny from his second coinage of 1604-19, P. Berry item 8, was uncovered in area F, event 365, a post-1696 occupation, fill layer. If one considers the item to have been part of the pre-1696 rubble used to create the fill layer then it could be considered to be another item that may have circulated in Newfoundland before 1650. Additionally a James I Irish shilling from the second issue of 1604-8 was uncovered in a post-1696 refuse layer; this is Berry item 89, recovered in area D, event 62. A Charles I penny dated 1630, Berry item 4, was also uncovered from an eighteenth century fill layer, area F, event 283 as were two French doubles tournois of Louis XIII, Berry items 43 (a variety produced 1642-43) and 52 (an early seventeenth century variety from the Bordeaux mint), both uncovered in area C, event 3, a post-1696 refuse layer near the waterfront.

69 The five coins described in footnote 68 are not included in this tally.

70 On counters and tally sticks in Newfoundland, see Kovalev, pp. 73-81 and Pope, *Fish into Wine*, 266-68. On the use of counters see Snelling, *A View on the Origin, Nature and Use of Jettons or Counters*, and the online essay by Mernick.

71 Also see footnote 53 above on the Hanns Krauwinckel II jettons recovered at Jamestown.

72 Mitchiner, *Jetons*, vol. 3, p. 1656.

lead tokens did circulate in Ferryland. In the statistics below I shall include the jettons and the lead token along with the French copper doubles tournois, the Spanish four maravedis and the basal state copper disks as items that could have circulated in Ferryland as small change below a penny sterling in value. In doing this I am being as inclusive as possible. As mentioned above in the footnotes, it is possible the four maravedis, with a sterling value of just over three farthings at 0.79d, may have actually circulated at a penny.

If we include all 43 coins listed in Charts I-III as items that may have been in circulation before 1650, the picture becomes fuller but does not substantially alter the ratios derived from the smaller sampling, limited to the ten coins of Chart I. In the fuller sampling, small change coins valued under one penny sterling are represented by 19 items, or 44.2% of the total,<sup>73</sup> low denomination coins valued at 1d but below 2d sterling are found in seven examples, being 16.3% of the total,<sup>74</sup> and finally the 17 higher denomination coins comprise 39.5% of the total.<sup>75</sup> Thus, of the 43 coins, only 44.2% represent small change of less than one penny in value, made from copper or lead, while 55.8% are higher denomination coins, composed of sterling, billon or other more valuable metals.<sup>76</sup> If we limit our sample to just the eight coins and two jettons found in a pre-1650 archeological context we get a ratio of 40% small change copper or jettons, to 60% more valuable coins. The ratio does not change much if we include the ten items from the first grouping with the items from the second grouping, namely, the coins minted before 1650 coins found in areas dating to ca.1625-1696 and leave out items from the undatable, disturbed layers. This combination yields 43.3% small change to 56.7% more valuable coins. In each case, no matter how conservative or liberal the sampling, small change coppers and jettons are shown to be less than half of the total of the recovered coins, the percentage being 40%, 43.3% or 44.2% as the sample size is broadened. Interestingly, if we include the five coins minted before 1650 that were found in an eighteenth century context, yielding an overall total of 48 items, the small change percentage remains about the same at 43.75%. That small change coins would be such a small proportion of the recovered coinage is unusual. These figures demonstrate that when someone in early Ferryland had a coin it was more likely to be a silver or billon coin valued at 1d sterling or higher than it was for them to have a small change copper or token!

We see a significant difference when we compare the pre-1650 finds with the colonial era coins minted after 1660 that have been recovered from the Ferryland excavation. The post-1660 minted coin total includes 22 English coppers and one silver sixpence, two Irish coppers and one gun money shilling, two Spanish silver coins, two French coppers, one Portuguese copper and one Dutch copper yielding a total of 32 coins of which 28 were coppers and only four silver, or 87.5% coppers to 12.5% silver.<sup>77</sup> Proportionally, the percentage of post-1660 coppers, at 87.5%, is twice as much as the small change percentages derived from any combination of the groupings

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73 These include: ten doubles tournois, two douzains, one four maravedis, two unidentified copper disks, three copper jettons and a lead jetton or token.

74 These are: three examples of the eight maravedis, an English penny, a bezemstuiver, a six stuivers cut down to 1d, and a Scottish 20d.

75 They include: two examples of the two stuivers, a counterfeit groat, two threepence, three sixpence of which one is Irish, three shillings of which one is Irish, a cut quarter-laurel, a half-real, an eight reales, a 100 reis, a 120 reis, and a 160 reis.

76 The one exception is the copper 8 maravedis at 1.5d, which is included in the denominations valued at above one penny.

77 The copper coins are Berry items numbers: 12-14, three Charles II farthings; 15, a William and Mary halfpenny; 16, a William and Mary farthing; 18-26, nine William III halfpence; 27, a George I farthing; 28-29, two George II halfpence; 30 a George III cartwheel penny; 31, a George III halfpenny dated 1799; 39, a George II Irish halfpenny; 81, a George II lightweight Irish halfpenny; also three unidentified coppers, item 34, a well-worn halfpenny of George (probably II but possible III) and 35-36, two farthings. The non- British coppers include Berry item numbers: 49, a French Louis XIV 4 sols; 50, a French Revolution 1792 or 93 1 sol; 64, a Portuguese 10 reis of 1743 (circulating at

of recovered coinage that may have circulated before 1650, which came to between 40% and 44.2%, depending on the sample size. These ratios indicate that in the earlier period there were far fewer small change coins available. Individuals used any small change they could find, primarily relying on French doubles *tournois*, as had been the case in Scotland under the Stuarts.<sup>78</sup> When the early Ferryland colonists were fortunate enough to obtain some coinage, it typically consisted of a few silver coins, which were sometimes cut down to make small change.

This was similar to the situation in the other American colonies of the period. Virginia Governor John Harvey petitioned James I to send the colony a supply of patent farthings because they had no small change. In the Dutch colony of New Netherland wampum became the standard for small change, a practice that spread, to some extent, to the British colonies.<sup>79</sup> In Massachusetts Bay a law was passed on March 4, 1635, that “musket bullets of a full boare shall pass currently for a farthing a peece, provided that noe man be compelled to take above 12d att a tyme of them.”<sup>80</sup> What we find in Newfoundland is a colony that primarily traded using credit. For the most part the credit was in cod to be delivered at a future date, because that was most significant commodity and the primary source of wealth in the colony. Ferryland had a small amount of hard currency

a halfpenny) and 66, a Dutch duit of 1780. The silver coins include Berry item numbers: 17, a William III 6d; 37, a James II Irish gun money shilling; 58, a Spanish half-real of 1731 and 60, a Spanish-American cob one real of 1672. Post-colonial coins recovered from the excavation, defined as coins minted during the nineteenth and twentieth centuries, are not included in this list. However, if we include the five coins minted before 1650 that were uncovered in an eighteenth century context, described in footnote 68 above, along with the post 1660 coins (because it is possible they circulated in the post-1660 period) there would be a total of 37 coins from a late seventeenth or eighteenth century context, of which 30, or 81%, were coppers and 7, or 19%, were silver. Adding these five coins slightly modifies the ratios given in the text of 87.5% coppers to 12.5% silver. It is possible some of the five pre-1650 minted silver coins were lost at a later period, but the dearth of post-1650 minted silver coins among the Ferryland artifacts demonstrates how much more prominent copper was in relation to silver during the eighteenth century than had been the case in the seventeenth century. Clearly, the ratios of small change to higher denomination coins shifts slightly depending on how we interpret the evidence but, in general, the ratio of coppers to silver moves from about 40% copper to 60% silver (up to 44% coppers to 56% silver) in the earlier period to somewhere around 80% copper and 20% silver (or possibly up to 85% copper to 15% silver) in the later colonial era.

78 Holmes, pp. 52-65 explains the design for the Scottish copper twopence and penny proposed by mintmaster James Acherson in April of 1597 was very closely modeled on the French double *tournois*, which was in general circulation in Scotland at the time. In fact, Holmes explains “It was not long before the French name *tournois*, corrupted to ‘turner,’ was applied to the twopenny pieces.” The French coppers continued to circulate once the Scottish coppers were introduced. Foreign copper coins were officially banned from Scotland on May 20, 1613, and to fill the void significant emissions of Scottish coppers were authorized; in 1614, an emission weighing 200 stones, later increased to 500 stones (yielding £13,335 or 1,485,900 twopence and 228,600 pennies) was produced with an additional 500 stones emission in 1624. However foreign coppers continued to circulate and several subsequent proclamations were issued banning their import. An act of February 1635 specifically mentioned “doubles” (doubles *tournois*) and the “Holland doys” (the Netherlands duits), which were the two most prevalent foreign coppers in Scotland; see Holmes, pp. 62-63.

79 Mossman, pp. 41-43. In Newfoundland 589 glass beads have been recovered at Cupers Cove, which Gilbert, p. 132, associates to “...the second decade of the seventeenth century [when] the planters at Cupids were making a concerted effort to establish a fur trade with the Boethuk Indians who lived roughly 18 miles to the west in Trinity Bay.” Gilbert suspects they were truck, or trade beads, to be offered to the Indians. Beads recovered at Ferryland appear to have been for fashion as the gilt glass beads on the Colony of Avalon site at <http://www.heritage.nf.ca/avalon/artifacts/misc4.html> also the buttons, buckles and beads found in the privy at <http://www.heritage.nf.ca/avalon/artifacts/display7.html> under “Drawer 3.” I am not aware of evidence that suggests wampum beads (made of shell, glass, amber, or other material) were commonly used as small change among the Newfoundland colonists and seasonal fishermen.

80 Mossman, pp. 106-7. Two years later on November 15, 1637, the Massachusetts General Court promulgated that wampum beads would pass at six to a penny and were to be legal as payment in sums up to 12 pence. In the same year Connecticut began accepting wampum as payment for taxes at the rate of four beads to the penny. See Jordan, *Coins*, “Wampum: Introduction” for further details as well as “Commodity Money: Introduction” regarding the use of commodities to alleviate the need for coinage, especially small change at: <http://www.coins.nd.edu/ColCoin/ColCoinIntros/Wampum.intro.html> and <http://www.coins.nd.edu/ColCoin/ColCoinIntros/Commodity.intro.html> [last accessed December 26, 2005].

in circulation that, to some degree, facilitated daily transactions. However, based on the published recoveries from the excavations at Ferryland through 2001, it appears that during the first half of the seventeenth century the colony had few small denomination coins, for only about 40% to 44% of the excavated coinage was in small change coppers or jettons, whereas in later periods small change coppers comprised about 88% of the recovered coinage. That such a large percentage of the lost coins from the pre-1650 period were higher denomination silver and billon items indicates the colonists did not have many coppers or jettons in their pockets to lose. Apparently when colonists were fortunate enough to acquire a few coins, the coins were primarily cut pieces or low denomination silver and, therefore, that is what they lost. If coppers or other small denomination token coinage had been available in more sufficient quantities they would be a far higher percent of the total lost coinage, as we find in the post-1660 period.<sup>81</sup>

### The DK token in context

We have seen that David Kirke used his authority to intimidate and exploit both the colonists and the seasonal fishermen that came to Newfoundland. In regard to the highly profitable business of selling alcoholic beverages, Kirke held a monopoly on wholesale liquor sales, enticed inhabitants throughout the colony to purchase tavern licenses and also opened a tavern in his own home. During that era most transactions in the colony were based on credit against future catches of cod, with some occasional use of coinage. We have also noticed that at that time, based on the currently available archeological evidence, there was a modest quantity of circulating coinage with small change coins under one penny in sterling value being less often encountered than higher denominations. This shortage of small change could have complicated the process of purchasing a drink at a tavern and might be viewed as an impetus to issue a small change lead token emission.

#### *a. Lead tokens in England*

The use of tokens made of lead, or sometimes pewter, which is a composite of tin and lead, can be traced back in England to ca. 1200.<sup>82</sup> Initially, these disks were employed as counters, but appear to have circulated as surrogate small change as early as 1400. A petition to King Henry IV from the House of Commons, dated 1402, stated that due to a severe shortage of halfpence and farthings, merchants were passing “money of foreign lands, ...halfpennies divided....and in some places tokens of lead.”<sup>83</sup> Silver farthings had been regularly produced, but usually in fairly

81 With the exception of hoards, most recovered coins represent small change that inadvertently fell from an individual's pocket and was lost. When there is a sufficient supply of coppers it is common to find that coppers are far more abundant in excavated areas than silver coins.

82 Mitchiner, “English Tokens: c. 1200 to 1425,” explains on p. 29 that, “The medieval token is better thought of as being a ‘chit-for-service,’ rather than as an item with a set monetary relationship to the sterling farthing.” For example, ecclesiastical tokens, made of pewter or lead, were handed out to clergy for attending mass and for participating in each of the divine offices during the day (Matins, Lauds, Prime, Terce, Sext, None, Vespers, and Complin). Records from the chapter house of Saint Omer (near Calais, now in France) state that the attendees must arrive before the conclusion of the reading of the martyrology and must not depart before the end of the service to be eligible to receive a token. The tokens were periodically redeemed for cash.

83 The petition stated the lack of halfpence and farthings forced the people to use “...money of foreign lands, as halfpennies of Scotland, and others called galey-halfpennys, and, in some parts, halfpennies divided (to the destruction and waste of the said money), and in some places tokens of lead.” Unfortunately, the denomination of the lead tokens is not mentioned. Since the division of halfpennies is immediately followed by the mention of the use of lead tokens, the phrasing may imply lead tokens were denominated at a farthing or less. The petition is quoted in Mitchiner, “English Tokens: c. 1200 to 1425,” p. 30, from Ruding, *Annals*, vol. 1, p. 250, also see Spufford, pp. 331-32 stating that in times of scarcity during the fifteenth century, fixed prices in London were divided into half-farthings and p. 328 on ‘galyhalpens’ which he identifies with soldini from Venice and other Italian cities. According to the *Oxford English Dictionary Online* the galley-halfpenny was “a silver coin, said to have been introduced into England by the sailors of the Genoese and other galleys that traded to London. Its use was prohibited by law early in the 15th century.” Galley-halfpence first were prohibited by Henry VI, see, *Statutes of the Realm*, 1409-10 Anno 11 Hen. IV, chapter 5,

small quantities, from the reign of Edward I (1272-1307) through the third debased third coinage (1544-1547) of Henry VIII.<sup>84</sup> The last silver farthing was a debased and limited issue, produced by Edward VI as part of his third coinage (1550-1553). Elizabeth I, in her first (1559-60) and second (1560-61) emissions, minted the halfgroat and penny, but did not include the halfpenny or the farthing. The dearth of small change in the regal emissions of Philip and Mary as well as during early emissions of Elizabeth encouraged the proliferation of lead merchant tokens. In her third (1561-77) and fourth (1578-82) issues, Elizabeth issued the new denomination of the three-halfpence along with a penny and another new denomination of three-farthings. The three-farthings was similar in size to the penny but was distinguishable because it included a rose to the right of the royal bust and a date on the reverse above the shield, neither of which were included on the penny [figures 5 and 6]. In Elizabeth's fifth (1582-1600) and sixth (1601-2) issues the two new denominations were eliminated and the halfpenny, which had not been minted since the debased coinage of Edward VI of thirty years earlier, was reintroduced as the smallest denomination silver issued [figure 7]. Phil Mossman has explained that, based on the price of sterling silver at that time, a silver coin of one farthing value would have been very time consuming and costly to produce as well as too small to handle in daily commerce, because it would have weighed only two grains. He continued "The queen rejected proposals to make the lower denominational coins larger by using debased silver. Instead, the halfpenny became the smallest silver coin and the monarch introduced a three-farthing piece so that one could make a farthing purchase with this new coin and receive a halfpenny in change from the shopkeeper."<sup>85</sup> Obviously, this was a cumbersome solution requiring both the purchaser and the vendor to have exact change. These denominations did not alleviate the problems related to transacting small purchases so many local merchants continued to produce small denomination lead tokens annually. For the most part these private issues were composed of lead but occasionally brass tokens were issued, as the square brass tokens produced by the city of Bristol.<sup>86</sup> Thomas Platter, a German traveling through England in the fall of 1599, gave us some interesting details on these tokens in his diary, explaining that lead tokens were valued at one-half to one-third of a farthing. Platter stated,

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"Because that Gally Half-pence do commonly run in the Realm for Payment, in Derogation of the King's Crown, and in great Deceit of the common People. It is ordained and stablished [sic], That the said Gally Half-pence shall never be current in payment nor in other manner within the Realm of England, upon Pain of Forfeiture thereof..." *Statutes*, vol. 2, p. 163. According to Michael Dalton, a legal commentator writing in 1630, galley-halfpence were out of use by that date; he stated "Money, called Galley Halfe-pence, Suskin, or Dotkin, and all Scottish money of silver, to bring and put in payment any such, was made felony by the stat. 3.H.5.1 & 2.H.6.9 but they are now out of use." Dalton, p. 277. The dodkin or duit, rated at one-half of a farthing, and the seskyn, valued at six mites, were both small denomination Dutch coins, there are several variant spellings for each. I use the forms adopted in the *OED*.

84 Initially Edward I minted the silver farthing at a lower fineness, so that the coin could be made larger at 6.65 grains. However, the public disliked debased coinage, therefore during Edward's third coinage emission, the farthing was produced at the sterling standard (.925 fine) but reduced in size to 5.5 grains, so that the value remained the same. On the continual reduction in size of the tiny farthing as the value of sterling increased, especially during the fifteenth century, as well as comments on the low mintage of this denomination, see Spufford, p. 331, who states that farthings were "...minuscule coins of good silver (for two generations after 1411 they weighed just under a quarter of a gram), which were minted in such negligible quantities that they could not have been very freely available." [0.25 gram equals 3.86 grains].

85 Mossman, p. 106 revised in his "A Second Errata," p. 2968; Peck, pp. 9-18, discusses aborted efforts under Elizabeth I in 1574 and 1576 to produce a regal copper halfpenny, called a pledge rather than a token, and additional rejected proposals from 1601, for halfpenny, penny and twopence pledges; also see his appendix 5 on pp. 583-84, where he paraphrases from Ruding an unissued draft proclamation of Elizabeth I authorizing regal copper halfpenny and farthing pledges; the full text is in Thirsk, pp. 599-601; on Elizabeth I three-farthings and halfpennies, see Withers, pp. 38-43.

86 See Mitchiner, "English Tokens: c. 1425 to 1672," with Elizabethan examples on pp. 115-23 and *Jetons*, vol. 3, pp. 1812-13; Snelling, *A View of the Copper Coin*, pp. 2-4; also, Peck, pp. 6-7 lists several contemporary citations.





**Figure 5:** An Elizabeth I penny, second issue (1560-61), 6.3 grains; 14.33 mm horizontal by 14.23 mm vertical diameter; Spink 2558. The obverse displays a crowned bust of Elizabeth facing left in a beaded circle, with the legend [cross-crosslet mintmark] E • D • G • ROSA • SINE • SPINA (Elizabeth by the grace of God a rose without a thorne). On the reverse is the shield over a long cross in a beaded circle with the legend [cross-crosslet mintmark] CIVITAS LONDON (City of London). Reverse die rotation 60° counterclockwise or 10:00 o'clock. *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*



**Figure 6:** A well-worn Elizabeth three-farthings, third issue (1572), 5.7 grains; 13.64 mm horizontal by 12.22 mm vertical diameter; Spink 2565. The obverse displays a central design of a crowned bust left of Elizabeth with a rose behind to the right, all in a beaded circle, with the legend [the ermine mintmark is clipped] E • D • G • ROSA • SINE • SPINA (Elizabeth by the grace of God a rose without a thorne). On the reverse is the shield over a long cross with the date 1572 above the shield, within a beaded circle with the legend [ermine mintmark] CIVITAS LON [D clipped] ON (City of London). Reverse die rotation 90° counterclockwise or 9:00 o'clock. I have included a worn issue so one can see how easily the coin could be mistaken for a penny. On this specimen the rose is well rubbed. Withers, p. 41, stated "The difference between a penny and a three-farthings was the rose behind the queen's head, and the date on the reverse. Get rid of the rose and the date and the coin would look like a penny, resulting in the gain of a farthing. Three-farthing pieces with the date and rose scratched out are not unknown!" *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*



**Figure 7:** An Elizabeth I halfpenny, fifth issue (1594-95/6), 3.0 grains; 9.95 mm horizontal by 10.19 mm vertical diameter; Spink 2581. The mintmark, a woolpack, is displayed above portcullis on the obverse, cross moline with a triangle of three pellets in the center of each quadrant on the reverse. Reverse die rotation 60° counterclockwise or 10:00 o'clock. *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*

The above coins are shown actual size (left) and 3X actual size (right).

Matters of coinage and payment are in good order in England for the queen mints only coins of pure gold and silver, the smallest is a halfpenny of pure silver, and very tiny... If one buys to the value of less than a 1/2d worth, permission is granted to mint lead or copper symbols [i.e. tokens] in one's own house, some four or six to a 1/2d, and these symbols are given to the apprentices [for distribution as change to customers]; when they [i.e. customers] have a 1/2d worth or more they exchange and reckon up together so that nobody loses.<sup>87</sup>

Private lead token emissions persisted under the Stuarts, because lower denomination regal coinage continued to be limited to the halfgroat, penny and halfpenny.<sup>88</sup> Under James I, it seems the lead token was valued at a farthing, for contemporary literature typically refers to this item as a farthing token. It is clear an abundance of lead tokens circulated in London. In 1609, Robert Cotton estimated that there were approximately 3,000 "Retailers of victual and small Wares" in the greater London area, each of whom annually produced about £5 in lead tokens for a total of about £15,000 in tokens [figure 8]. He further stated that about 90% of these tokens were passed to customers during the year, necessitating a new emission each year.<sup>89</sup> Cotton's estimates were

87 It is significant to note that Platter brought this information up following a discussion of taverns. In his diary entry Platter explained that the taverns did not have a fixed-price meal but rather one was required to select items from an *à la carte* menu which was "very dear for one person alone desirous of making a good meal and drinking well." He went on, "I have never seen more taverns and ale-houses in my whole life than in London, and it is the custom in the latter to erect partitions between the tables so that one table cannot overlook the next. Matters of coinage and payment are in good order in England for the queen mints only coins of pure gold and silver, the smallest is a halfpenny of pure silver, and very tiny, and a whole penny is roughly worth 1 1/2 German kreuzers. Accordingly the coins are an English 1/2, penny, 2, 3, 4, and 6 English pennies, which 6 make half an English shilling, equivalent to a whole frank [*sic*] in some parts, or 2 batzen 1 kreuzer. A whole shilling equals 4 1/2 batzen. These are the eight different silver coins [*sic*], I count only six denominations mentioned from 1/2 to 6d, possibly he returned with two examples of some denominations to make eight coins] which I took back to Basel, other varieties I did not see in England. And so soon as a new king or queen succeeds, all the old silver coins are called in, melted down, and the new king or queen's emblem struck on them, for which reason old English silver coins are hard to come by. If one buys to the value of less than a 1/2d worth, permission is granted to mint lead or copper symbols in one's own house, some four or six to a 1/2d, and these symbols are given to the apprentices; when they have a 1/2d worth or more they exchange and reckon up together so that nobody loses." Platter, pp. 189-90. I should explain that throughout this paper I use the word tavern in the more general sense, referring to all establishments selling liquor, including ale- or tippling houses, as well as establishments where food and drink were served, which were more properly called taverns or vintner's wine taverns and inns or lodging houses, where one could get a room as well as food and drink. Technically, the English ale-house was prohibited from selling wine according to an act of 1553 regulating the wine trade. In practice the differences between these establishments were more of a matter of prestige and price; the ale-house had less ambience and provided fewer selections than the tavern or inn but in terms of numbers, predominated by far. In July of 1577 the Privy Council sent a letter to local magistrates requesting them to report the number of drinking establishments, as a preliminary step to assessing a tax. The county of Norfolk did not distinguish the various types of establishments but simply reported 480 "inns and alehouses." From the returns of the other 29 counties in England the totals were: 2,161 inns, 339 taverns and 15,095 alehouses (Yorkshire had the most alehouses by far with 3,674, Derbyshire was second with 726, Middlesex was third with 720 alehouses and Lincolnshire fourth with 702); see Clark pp. 11-12, 41-44, 96 and 138. Platter categorized taverns and ale-houses together in the above quote, while below, in another quote from his diary of 1599, cited in footnote 101, he used the term ale-house, where he probably meant tavern or inn, at least in the legal sense of the term, since he mentions the consumption of both beer and wine.

88 During the Civil War, some regional mints produced silver regal threepence (3d) between 1644 and 1646, otherwise, with the exception of the copper farthings produced under royal patents (1613-44) and the rare Commonwealth farthings (see Peck, pp. 88-103, especially pp. 93-95), the only small change government issue coinage during the early Stuart and the Commonwealth eras were the halfgroat, penny and halfpenny denominations.

89 In a paper written for King James I in 1609, Robert Cotton, the representative in Parliament for Huntingdon, stated, "The benefit to the King will easily fall out, if he restrains Retailers of victual and small Wares from using their own tokens, for in and about London, there are above 3000, that one with another cost yearly 5 l. apiece of leaden Tokens, whereof the tenth remaineth not to them at the years end, and when they renew their store, which amounteth to above 15000 l. And the rest of the Realm cannot be inferiour to the City in proportion. And the form and figure may with an Engine so subtly be milled, that the charge will prevent all practice of false play." From Robert Cotton, "The Manner and Means How the Kings of England Have from Time to Time Supported and Repaired their Estates," 1609, posthumously published in the anthology of Cotton's writings edited by Howell, pp. 199-200; also quoted, with some editorial changes, in Caldecott and Yates, p. 319.



**Figure 8:** An example of a worn lead London merchant token dated 1601. Enlarged 3X actual size, followed by the obverse with the date enhanced. This is a fairly large size token weighing 104 grains with a horizontal diameter of 14.6 mm and a vertical diameter of 15 mm. The obverse displays the initials QT with the date below, the reverse bears a design found on several varieties of tokens, referred to by Mitchiner as a checkered field. Recovered from the dockyards area of London on the north bank of the Thames near Canary Wharf, which is on the Isle of Dogs peninsula, about 3 miles east of the Tower of London. *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*

probably overly liberal since he was trying to convince the king there was a handsome profit to be made by taking over this enterprise, but his numbers do indicate tokens were common in daily exchange.

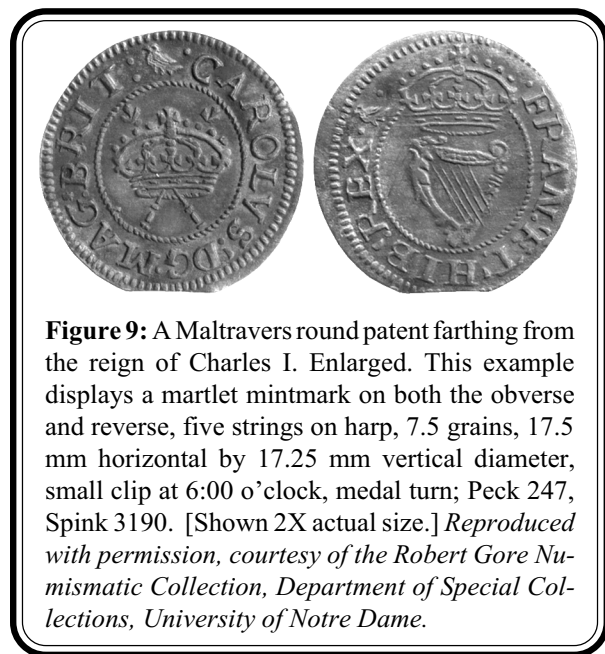
Previously, Cotton had won the favor of the king by convincing him to institute the rank of baronet and then sell that title for a fee. The idea of exploiting token production to the king's advantage was investigated further. A few years later, on May 19, 1613, James I decreed that he had authorized John, Lord Harington of Exton to issue regally approved copper farthings.<sup>90</sup> The official proclamation began with a concise description of the current situation:

Whereas there hath bene in times past some toleration in this our Realme, of Tokens of lead commonly knowne by the name of Farthing Tokens, to passe between Vintners, Tapsters, Chaundlers, Bakers, and other the like Tradesman, and their Customers, whereby such small portions, and quantities of things vendible, as the necessitie, and use specially of the poorer sort of people, doeth oftentimes require, may be conveniently bought, and sold without enforcing men to buy more ware then will serve for their use and occasions...

The document continued by explaining the problems with lead tokens, namely, that they were not generally accepted but "passeth now onely betweene Customers" and that they were subject to counterfeiting, were sometimes refused "as doubtfull things" and that they lost value when the merchant who emitted them died or departed. The proclamation continued with the announcement that Lord Harington had been granted the authority by Letters Patents to make "Farthing Tokens of Copper" with the provision that "Our Subjects should not be forced to receive them in payments, otherwise then with their own good liking." But the proclamation went on to "forbid all and every person and persons whatsoever, not only to forbear from [i.e. abstain from or avoid] and after the feast of the Nativitie of St. John Baptist [June 24th] next following the date of this our Proclamation, to use, deliver or receive any such Leaden Tokens."<sup>91</sup>

<sup>90</sup> On the patent farthings see Ruding, vol. 1, pp. 369-70; Peck, pp. 19-82, Mossman, pp. 106-7 and Sargent and Velde, pp. 261-68.

<sup>91</sup> Larkin, vol. 1, pp. 287-90 and James I, 1613, pp. 1-2. Thus, the people were to avoid lead tokens from the date of the proclamation (May 19th) and then were prohibited from using them after June 24th.



**Figure 9:** A Maltravers round patent farthing from the reign of Charles I. Enlarged. This example displays a martlet mintmark on both the obverse and reverse, five strings on harp, 7.5 grains, 17.5 mm horizontal by 17.25 mm vertical diameter, small clip at 6:00 o'clock, medal turn; Peck 247, Spink 3190. [Shown 2X actual size.] *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*

Merchants and many poorer subjects opposed the use of the tiny, lightweight patent farthings [figure 9]. Merchants complained that they were unable to redeem the tokens for silver on a timely basis and when the tokens were redeemed they only received 20s in silver for 21s in tokens. "Handy-craftsmen" complained that they were being exploited because some employers would purchase large quantities of these tokens at a discount and then use them at face value to pay their employees at the end of the week. The employees were then stuck with tokens that could not be redeemed for silver at full face value and which various merchants were reluctant to accept. Anti-Royalists, such as the Puritans, saw the entire scheme to be inappropriate, whereby the king sold an exclusive privilege to a noble who then could

exploit the situation for his own gain to the detriment of the public. For these and related reasons, such as the circulation of unredeemable counterfeit patent farthings, several merchants continued to produce lead tokens forcing the King to issue further proclamations on May 11, 1614, October 26, 1615, and March 17, 1616/7, prohibiting lead tokens.<sup>92</sup> The 1616/7 proclamation stated:

Forasmuch as since the publishing of Our third Proclamation given at Royston, the sixe and twentieth day of October 1615, establishing the continuance of Our Farthing-Tokens, and prohibiting the use of all, or any other Tokens whatsoever; Wee are informed, That divers Chandlers [i.e. retailers] and other Tradesmen doe continue the making, use and utterance of their unlawfull Tokens of lead, brasse, or other mettall... in contempt of our Royal commandement... Doe by these presents publish and declare Our Royall will and pleasure,... that the further use of the said leaden Tokens, and all or any other Tokens whatsoever made or used within Our Realms of England and Ireland, and Dominion of Wales, bee from hencefoorth utterly suppressed and abolished.<sup>93</sup>

<sup>92</sup> The 1614 proclamation, p. 1, states regarding the patent farthings, "thereupon some not well disposed, doe either refuse to use them, or doe continue to utter their own Tokens, of Brasse, Copper, and other Mettall, or matter...." Also, this proclamation uses the spelling of "Iohn Lord Harrington" whereas the original proclamation of 1613 gave the spelling Harington. To clarify a point in the quote, where the promulgation states the October 1615 promulgation had been the third document related to the continuance of the patent farthing emission, I have only listed the two promulgations related to its continuance mentioning lead tokens. There was also a proclamation on June 21, 1614 explaining that the patent passed to Lady Ann Harington, due to the death of her husband (Feb. 27, 1613/14) and, soon thereafter, of her son. I did not include this in my text since it was not issued relative to the problem of the continued circulation of lead tokens. See Larkin, vol. 1, pp. 287-90, 308-10, 350-51 and 363-65.

<sup>93</sup> Larkin, vol. 1, pp. 363-64 and James I, 1615. This proclamation also prohibited the distribution of patent farthings at a discount (21s in patent farthings had previously sold for 20s sterling), called for a "continuall rechange" of the farthings in London and prohibited the counterfeiting of the tokens "or the Engines or Instruments whereby they are made...." Prohibitions against selling quantities of patent farthings at a discount were reiterated in the proclamation of 1616/7, but by 1625 the tokens were again selling at the discounted rate. It should be noted the proclamation stated 20s in tokens were to be sold for 20s in silver, thus third parties were not to profit from the tokens; but at the London exchange merchants were required to trade 21s in patent farthings for 20s in silver, thus taking a loss. The excess 1s in tokens would be the profit for the patentee, since the tokens could be recirculated at 20s in tokens for 20s in silver; presumably the profit was partly for the cost of operating the exchange.

Nevertheless, the production of lead tokens continued during the late 1620s and early 30s, however, at reduced levels from earlier periods. Mitchiner lists a sampling of 238 varieties of lead and pewter tokens, primarily from London, produced between 1600 and 1664. There are just three dated lead tokens in Mitchiner's sampling from the early Stuart period, corresponding to 1613, 1624 and 1629. But his catalog clearly demonstrates lead token production began to increase in the late 1630s for, while there are only three dated lead tokens before 1638, there are eighteen dated varieties between 1638 and 1650.<sup>94</sup> It appears lead token emissions increased just prior to and during the English Civil War of 1642-49.<sup>95</sup>

Significantly, a substantial portion of the seventeenth century lead tokens in Mitchiner's London sample, at least one-third, were emitted by taverns.<sup>96</sup> Indeed, in a contemporary English play by Thomas Decker of 1604, and a few decades later in a treatise by Thomas Haywood from 1635, references are made to lead tokens, where they are generically referred to as tavern tokens.<sup>97</sup>

94 Mitchiner, "English Tokens: c. 1425 to 1672," item numbers 00-21 and 46-62 listed on pp. 124-25 (the first variety is listed as number 00, followed by 1-232). The varieties are as follows: 1638 (item 46), 1639 (items 47-48), 1640 (items 50-51), 1641 (items 4 and 49), 1643 (item 5), 1644 (items 6 and 52), 1646 (item 53), 1647 (tin provincial token listed on p. 138, item no. 2, also illustrated in plate 21), 1648 (items 8 and 54) and 1650 (items 9-11 and 55). The remaining dated lead tokens are contemporary with the Commonwealth and early Restoration trade token era, covering the period 1651-64. Several dated tokens, discussed but not illustrated by Mitchiner, are in Caldecott and Yates, including dated examples from 1624, 1629, 1640, 1641 (2), 1644 (2), 1646 and 1648, as figures 1-9.

95 In addition to the political instability of the times, the use of lead tokens may also have been a protest against the small patent farthings. Puritans were especially distressed by these lightweight coins; indeed on March 4, 1635, Massachusetts Bay legislated that patent farthings "shall not passe for current pay" but rather musket balls would be accepted; see Mossman, p. 107. During this era several pamphlets were produced in London explaining the problems with patent farthings such as the anonymous *Humble Petition* of 1642 and the anonymous *Remedy* of 1644 (see bibliography for full citations). Further, due to the Civil War, in 1644, the production of pattern farthings was completely suspended, leaving no alternative to token coinage. The pro-patent farthing pamphlet, *The Humble Petition* of 1644 (written to answer the *Humble Petition* of 1642), requested production of patent farthings be restored because merchant farthing tokens were reappearing. The pamphleteer accused merchants of siding to "To suppress these Farthing Tokens, that so they may advance their owne Tokens, Stamps, Seales, Names, Signes, Superscriptions, if not Images, as now appears (though they be far inferiour in dignity to Caesar) And also altogether oppugnant [*sic*] to divers weighty reasons both in the King, and his Royall Fathers Proclamations..." (*Humble Petition*, 1644, point 8, unpaginated, on [A4 recto]). There is also evidence from Bath in 1636 regarding proclamations "about farthinges" and "for puttinge downe of farthinges" that might refer to locally produced merchant tokens rather than the royal patent farthings; see du Quesne Bird, p. 5.

96 Mitchiner, "English Tokens: c. 1425 to 1672," pp. 123-38; also see plates 16-21 on pp. 157-62. Eighty-nine, or 38% of the total 233 varieties, are from taverns; these include items 51, 55, 67, 68, 112, 114, 115, 120-99, 209 and 210. For comparison, tokens bearing general guild arms or guild arms along with a specific trade, from Apothecaries to Wheelrights, represent a smaller group than tavern tokens. They include variety numbers 46-119, from which I excluded the tavern related guilds (innkeepers, taverns and vinters), for a total of 67 varieties or 29% of the 233 varieties represented. Many of the remaining tokens cannot be identified with a specific enterprise; for instance, some only contain initials that have not been identified. Quite possibly some of those unidentified varieties were tavern tokens. Also, Mitchiner mentioned on p. 126, "Guild arms were also sometimes used as tavern signs from the seventeenth century onwards." Thus, some of the 29% of the total that refer to guilds and trades may, in fact, represent tavern tokens. Tavern tokens were at least 38% of the total and may have accounted for as many as 50% of the total varieties emitted.

97 Quoted in Mitchiner "English Tokens: c. 1200 to 1425," p. 35, from Thomas Dekker, *The Honest Whore*, Part one, Act one, scene four, where Castruchio says, "Let me alone, I have a trick, a conceit, a thing, a device will sting him i'faith, if he have but a thimblefull of blood in's belly, or a spleene not so bigge as a taverne token." in Dekker, 1604, unpaginated, on signature on B3<sup>v</sup>. Editions of this work were published in 1604, 1605 and 1635. The other reference, not in Mitchiner, is from Thomas Heywood, *Philocothonia*, 1635, tract two, chapter 15, p. 60, stating, "No man must call a Good-fellow Drunkard, for that's a name of reproach and indignity...But if at any time they spy that defect one in another, they may without any forfeit or just exceptions taken, say: His is Foxt, Hee is Flaw'd, Hee is Flusterd, Hee is Suttle, Cupshot, Cut in the Leg or Backe, Hee hath seene the French King, He hath swallowed an Haire or a Taverne-Token, he hath whipt the Cat,... ." The *OED Online*, second edition, lists other citations under 'Tavern,' meaning 4, including a citation from Ben Jonson, *Every man in his humor*, act 1, scene 3, 1598 (also editions in 1601 and 1616) and one from *Meeting Gallants* 17, 1604. The term tavern token also appears in later literature; it is mentioned in the dedicatory preface of Margaret Cavendish, *CCXI Sociable Letters*, 1664, on [A2r]. This work is also available in a recent edition by James Fitzmaurice, New York: Garland, 1997. Several other sources link tokens to taverns but they

During this era a beer at a local tavern typically cost less than the smallest denomination silver coin, the halfpenny. On January 19, 1618/9, James I promulgated that the maximum allowable price for a pint of premium beer or strong ale would be a halfpenny and a maximum price for a pint of single ale or beer would be a farthing.<sup>98</sup> Extrapolating the cost of a pint based on the price of a barrel of beer during the reign of Charles I, we find that in Portsmouth a double or strong beer was about 0.43d per pint, a single or middle beer averaged 0.34d and a small or weak beer was 0.26d; while in London prices were slightly higher at about 0.6d for a double beer to 0.34d for a pint of small beer [the mean average would put a London single beer at 0.47d a pint].<sup>99</sup> Clearly, the price of beer fluctuated from city to city and even from tavern to tavern, with pricing differentials at a farthing or less. A pamphlet from 1644 suggested that by suppressing farthings the cost of liquor would be rounded up to the next highest halfpenny, to the detriment of the poor, stating "To suppress Farthings at such a time, when a quart of that liquor which refreshes the spirit of the poore, is raised a Farthing higher then it ever was; doth cause such a peevish continued trouble in their small distracted rules of Arithmetick; and is such a fretting whet-stone to sharpen the edge of their groanes, that it will endanger the renting of the clouds."<sup>100</sup> Additionally, taverns sold tobacco, another popular product purchased in small quantities, for

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often use the term farthing token, which might refer to royal patent farthings or to locally produced lead farthings. For example, an anonymous anti-royalist tract of 1644, *A Copie*, cited in the bibliography, includes in its long title "...And how they would have burnt down an Ale-house at the Brill, because the woman refused Farthing tokens; And other cruelties of the Cavaliers, manifested to the Kingdome." In this case it is quite possible the "hostess," as she was called, refused to accept the lightweight regal patent farthings. The title uses the phrase "would have burnt down an Ale-house at Brill" because the text explains on p. 4 that the Royalists actually set fire to the house but allowed neighbors to extinguish the blaze.

98 The regulations of James I of 1619 are in Larkin, vol. 1, pp. 409-13, with the prices on p. 411. "Common Ale-house, and Victualling-house ... shall not utter or sell any strong Beere or strong Ale above the peny the quart, and small Beere or small Ale above a halfe-peny the quart, and so after the same rates." The regulations also state no dice, cards or unlawfull games, no drinking after 9:00 PM, no smoking, no pawning or harboring of vagabonds among other restrictions. However, it seems smoking and probably gambling and related restricted acts were regularly tolerated in ale-houses; see footnote 101 on smoking in ale-houses during the Elizabethan era. It should be noted that James I disliked tobacco and unsuccessfully tried to restrict its use. In a proclamation of June 29, 1620, restraining the wholesale tobacco trade, James I stated "...out of the dislike Wee had of the use of Tobacco, tending to a generall and new corruption both of mens bodies and manners, ... aswell [sic] as the great waste and consumption of the wealth of Our kingdomes, as the endangering & impairing the health of Our Subjects, by the inordinate libertie and abuse of Tobacco, being a weede of no necessary use..." (Larkin, vol. 1, p. 481). The beer values from the 1619 promulgation were the highest allowable prices, and reflected charges for the highest quality products, sold by merchants designated as "purveyors to the king." In fact, a statement taken before Charles Talber for Hugh May, Clerk of the Markets to his Majesty's Household at Southampton on August 21, 1625, declared "A full quart of the best [i.e. strongest] ale or beer by measure sealed - 1d; A full quart of single ale or beer by measure sealed - 1/2d." See the webpage <http://www.portsdown.demon.co.uk/mark.htm> [last accessed Feb. 12, 2006]; it is part of the site by Roger Towner and Richard Roberts cited in the bibliography.

99 Clark, pp. 97-98 states that during the reign of Charles I a barrel of double, single and small beer cost respectively, 10s, 8s, and 6s in Portsmouth, while in London the price was 14s for strong down to 8s for a barrel of weak beer. A barrel was about 35 gallons, as is mentioned in Clark on pp. 104 and 114. I derived the values for a pint from these figures. Beer purchased for consumption on the premises was usually sold in an earthenware or stone pot that held a pint or in a larger size pot that held a quart (two pints). There were also pots holding up to two gallons for groups wishing to "pass the pot." Some alehouses also sold beer in other measures, such as the thirddendal pot of three pints and the half-thirddendal of 1.5 pints. By the seventeenth century, the better London establishments served drink in more refined vessels; some varieties in use in Heywood's treatise of 1635, include: the mazer, noggin, whiskin, piggin and the wassail- or ale-bowl. Take-away or "outside" beer, as it was frequently referred to by contemporaries, was usually sold at a reduced rate by the quart and was poured into the customer's pail; only weak beer was available for take-out customers; see Clark pp. 66-67 and 94.

100 From the pro-patent farthing pamphlet of 1644, *A Humble Petition*, [unpaginated, signature A3 recto]. The text called for the suppression of lead tokens and thus assumed there would be no farthings without the continuation of the regal patent issues. It neglected to mention that even if all lead tokens and patent farthings were suppressed, it did not necessarily follow that prices needed to increase, but rather it might require the poor to purchase larger quantities than previously, that came up to the value of the next halfpenny.

prices under a halfpenny.<sup>101</sup> Tokens, at a farthing or even a half or a quarter of a farthing in value, would be very useful when paying and when making change to customers for liquor and tobacco purchases.

In this context it is important to point out that a halfpenny token was not common in early seventeenth century England. Even when the great proliferation of milled copper and brass trade tokens was initiated in 1648, only farthing tokens were produced; the milled halfpenny token was not introduced until 1656.<sup>102</sup> From the reign of Edward I (1272-1307) through the end of the Commonwealth era most rulers minted a silver halfpenny. Elizabeth I had considered issuing a regal copper halfpenny, referred to as a pledge rather than a token, but ultimately rejected the proposal and continued with tradition by issuing a sterling halfpenny.<sup>103</sup> During the early Stuart era the halfpenny continued to be a regal sterling issue. However, although the vast majority of early seventeenth century sources only refer to lead tokens of a farthing or less in value, we do find some documentation of a halfpenny lead token. In a debate held in Paris on September 4, 1612, between Daniel Featley (or Featly), an Anglican Doctor of Divinity and Richard Smith, a Catholic priest, a discussion arose regarding grammatical points related to the use of the phrase "transubstantiated bread." Replying to the Catholic position, Featley explained that he viewed the distinction made by the Catholic as follows, "I see no more then between a siluer and a leaden token of the same value; both an halfe penny..."<sup>104</sup> This statement may be taken to reflect the fact that there actually were lead tokens of a halfpenny value in circulation, or, it could be considered to be a rhetorical analogy stating that the distinction his opponent was making was no more than the distinction between a leaden token and a silver coin of equivalent value and simply stating the analogy in terms of the lowest value English silver coin, the halfpenny. However, there is at least one other reference to a lead halfpenny from this era. James I, in proclamations of May 19, 1613, May 11, 1614, and March 17, 1616/7, on patent farthing, limited his remarks regarding lead tokens to those of a farthing in value, but in his proclamation of October 26, 1615, he stated, "And that no person and persons shall receive at the hands of any other person whatsoever, any other Farthing Tokens, or Halfe peny-Tokens, or any other Tokens then [than] Our said Farthing Tokens..."<sup>105</sup> None of the subsequent royal proclamations related to the use of patent farthing tokens and the suppression of lead tokens directly refers to any denomination other than a farthing token, although a proclamation of Charles I from May 30, 1625, states that "no Farthing Tokens, or other Tokens whatsoever heretofoe made, or hereafter

101 Platter, p. 170, describing life in London in 1599 stated, "In the ale-houses tobacco or a species of wound-wort are also obtainable for one's money, and the powder is lit in a small pipe, the smoke sucked into the mouth, and the saliva is allowed to run freely, after which a good draught of Spanish wine follows." This combination of Chesapeake tobacco and Spanish wine would have been the standard fare in Newfoundland taverns during Kirke's era. In 1631, Virginia tobacco sold to London retailers at 5 to 6d per pound; see Thirsk, selection 14, pp. 348-49.

102 G. Berry, p. 2. He further states on pp. 2-3, that from 1656 to the Restoration, the farthing token was the prevalent denomination; after 1664, halfpenny issues were more common. Apparently this was not due to inflation but to the demonitization of the Commonwealth silver halfpenny and the fact that Charles II did not produce any denomination under a penny until the copper halfpenny and farthing issues beginning in 1672. The penny token first appeared in 1663 in North Wales and Cheshire, with the first dated Cheshire penny being the Thomas Minshull penny of 1666 from Chester.

103 Peck, pp. 9-18, as discussed above in footnote 85.

104 This reference, dating to 1612, was not recorded in print until 1630. One of the participants, Richard Smith, a Catholic priest, was appointed by the Pope to be Bishop of Chalcedon and Vicar Apostolic of England in 1625. In his reply to the Catholic position on transubstantiated bread, Featley is reported as stating, "I might say likewise (quoth M. Featly) that no Protestant maketh a figure in the *copula*, or *praedicatum*, but onely an amplification of it in your language. I pray you, what difference is there betweene that your *Ampliatio copula*, and the Rhetoricians *enallage temporis*? I see no more then between a siluer and a leaden token of the same value; both an halfe penny, Let vs not striue about words: What is the thing meant by *Hoc? pro quo nomine stat hoc pronomen?*" Featley, p. 299.

105 Larkin, vol. 1, p. 351 and James I, October 26, 1615.

to bee made,...” will be tolerated except for the patent farthings.<sup>106</sup> In this instance it is possible “other tokens” could imply the existence of tokens of other denominations, such as halfpence tokens, or possibly, it might refer to counterfeit or foreign tokens since both counterfeit and foreign tokens were specifically banned later in the proclamation, or it may not be meant to imply anything other than a total ban on all tokens other than patent farthings.<sup>107</sup> That the halfpenny token is mentioned in very different contexts in references from 1612 and 1615, suggests halfpenny tokens did exist. However, it is clear from the extant sources that lead tokens from the eras of James I and Charles I were usually called farthing tokens, when a value was associated with them, and that typically lead tokens traded at a farthing, with smaller diameter issues at some fraction of a farthing as mentioned by Platter.

*b. The DK lead token from Ferryland*

Lead farthing tokens, frequently issued by taverns, were common in London during the era that Kirke controlled Avalon (1638-1651) and would not have been considered something novel or unusual to the Ferryland colonists. Further, the use of initials, as is found on the DK disk, was a standard attribute of merchant tokens and is found on the vast majority of contemporary English lead tokens.<sup>108</sup> The inclusion of initials, or a symbol uniquely associated with the issuer of a token, was not only an advertisement for the business but it also proclaimed to the public as to who emitted, and therefore who backed and accepted, the token [figures 10-13]. For David Kirke, issuing a token with his initials would be both an advertisement and a symbol of his economic status in the community.<sup>109</sup> Further, if Kirke intended the DK disk to circulate throughout the community, at the various taverns in the colony and not just at his own establishment, it would also be a political statement to the populace of Ferryland reinforcing the fact that Kirke was the nominal ruler of the region.<sup>110</sup>

106 Larkin, vol. 2, pp. 39-40 and Charles I, May 13, 1625, p. 1, “Wee thereore, no lesse tendring the good and ease of Our loving Subjects, have resolved upon the continuance, use, and rechange of the said warranted Farthing Tokens, And doe hereby publish and declare Our Royall pleasure and Commandment, that no Farthing Tokens, or other Tokens whatsoever heretofore made, or hereafter to bee made, shall be used, given, or received in exchange upon any pretence whatsoever, within Our Kingdoms of England and Ireland, and our Dominion of Wales....” See Larkin, vol. 2, pp. 39-41 for the full proclamation; also see the proclamation of March 1, 1635/6 against counterfeit farthings on pp. 500-503, stating, “...great quantities of counterfeit Farthing Tokens have beene made & vented, both in England and Ireland.”

107 Charles I, May 13, 1625, p. 2, states “...nor shall use, utter or disperse any such foreine Farthings or Tokens, upon paine of Our displeasure,...”

108 Of the 238 varieties of English tokens from 1600-1664, listed in Mitchiner, “English Tokens: c. 1425 to 1672,” pp. 123-138, there are 217 varieties that contain initials while only 21 varieties lack any initials or name. Those items lacking initials are items 46-49, 51, 52, 81, 85, 90, 91, 112, 120, 124, 134, 135, 137, 210 and 229-32. However, most of these tokens include symbols connected with a specific establishment, but do not include the issuer's initials; for instance, item 210 displays a checkerboard inside a circle and the legend IN/FETTER/LANE referring to the Checkerboard Tavern in Fetter Lane, London. Thus, for the most part, they include similar information but without referring to a specific individual. Possibly focusing on the location represents an attempt to exploit the advertisement potential of tokens or it may have been a solution for partnerships with several proprietors owning varying numbers of shares. Certainly the inclusion of a picture instead of initials would be more useful for illiterate customers.

109 David Kirke also proclaimed his status by acquiring several luxury items including personalized monogrammed pipes, imported from Virginia. Nine clay pipes have been recovered in the Kirke family house midden with the monogram DK found on the bowl of each pipe. Tuck and Gaulton, p. 104, Gaulton, p. 33 and Gaulton and Tuck, pp. 215-16 with figure 14 on p. 215. The pipes were made from Chesapeake clay and exactly match pipes found in Charles County, Virginia, on the site of the house occupied by Walter Aston, 1628-1655. The only difference is that the Aston pipe bowls have the monogram WA rather than DK. Kirke purchased tobacco from Virginia and had dealings with Virginia merchants. On the connections between Virginia and Newfoundland see Pope, *Fish into Wine*, pp. 150 and 241.

110 The Canadian Broadcasting Corporation news report cited above in footnote one, incorrectly stated that Kirke had a license from the king to make his own money. The Kirke grant, published in Matthews, pp. 82-116, does not mention or imply a coining privilege. However the privilege of coining in Newfoundland had been granted to the London and Bristol Company in the earliest Newfoundland patent, granted by James I on May 2, 1610. The grant to “the Companye





**Figure 10:** The obverse of this lead token displays the initials RI or RJ with a vine stem design, a rooster is depicted on the reverse. Enlarged to 2X actual size. The item is lightly smaller than the DK token but has a similar “planchet” appearance, being thinner at 9 o’clock and gradually thickening along the horizontal plain toward 3:00 o’clock; it weights 80.2 grains with a diameter at 14.6 mm horizontal and 15 mm vertical, the reverse die alignment is 270° counterclockwise or 3 o’clock, suggesting the possibility of a square mold form. This token displays some stylistic similarities in the vine stem design with a seventeenth century token bearing the initials TP (46.8 grains, 14.5 mm) recovered from City Bank, London, that is listed in Mitchiner, “English Tokens: c. 1425 to 1672,” on pp. 130, item 138, p. 136, item 138 and illustrated in plate 19, p. 160. A uniface token bearing the RI initials (61.4 grains, 16 mm) recovered from City Bank is listed in Mitchiner, “English Tokens: c. 1425 to 1672,” on p. 139, item 32 and p. 141, item 32 but without an illustration; I am not sure if it is related to this RI token or not. The two-sided RI token illustrated here was recovered from the dockyards area of London on the north bank of the Thames near Canary Wharf, which is on the Isle of Dogs peninsula, about 3 miles east of the Tower of London. *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*



**Figure 11:** A uniface lead token with the initial F. Enlarged to 2X actual size. The left edge of the down stroke of the F was centered in the mold reservoir, thus the letter is off-center to the right on the token. The item weighs 82.6 grains and is quite round in appearance with a diameter at 16.21 mm horizontal and 16.04 mm vertical. Recovered from the dockyards area of London on the north bank of the Thames near Canary Wharf, which is on the Isle of Dogs peninsula, about 3 miles east of the Tower of London. *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*



**Figure 12:** A well-worn uniface lead token displaying the initials EP, enlarged to 2X actual size. The item weighs 67.5 grains and has a fairly round appearance with a diameter at 19.43 mm horizontal and 19.96 mm vertical. Recovered from the dockyards area of London on the north bank of the Thames near Canary Wharf, which is on the Isle of Dogs peninsula, about 3 miles east of the Tower of London. *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*



**Figure 13:** A worn and damaged uniface lead token bearing the initials HD with a denticle border. Enlarged to 2X actual size. Much of the cross stroke of the H has fallen off. The token weighs 98.3 grains with a diameter at 22.50 mm horizontal and 23.27 mm vertical. Recovered from Redhill, Surrey, which is 20 miles south of London. *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*

The design and composition of the recovered disk closely associates it with contemporary English lead farthing tokens. It is evident Kirke stood to make a sizable profit from liquor sales. It is also clear that the scarcity of small change was detrimental to the tavern trade because it complicated daily transactions with customers; this is why tavern owners made up such a significant percentage of the London merchants emitting lead tokens. That the DK disk was uncovered in the cobblestone just outside Kirke's tavern lends further credence to the attribution of the disk as a token. Therefore, although we cannot definitively prove how this disk was used, it appears quite probable both from the historical context and from the location of the recovery, that the DK disk was intended to be a token to facilitate transactions at local taverns.

Additional evidence regarding the nature of this artifact relates to the size of the disk at 17.27 mm by 18.33 mm in diameter with the weight of 7.5 grams, which equals 115.7 grains. As stated at the start of this paper, the diameter of the DK disk is very close to the diameter of the Richmond and Maltravers oval pattern farthings of 1625-36 at 18 mm, which would associate the disk, in diameter, with contemporary English farthings. However, English lead farthing tokens of the period were typically somewhat smaller and weighed far less than the DK disk. Mitchiner calculated the mean average diameter and weight for 225 varieties of lead and pewter tokens produced between 1600 and 1672, primarily from London, at 13.87 mm in diameter with an average weight of 31.94 grains, which he revised slightly to 13.67 mm diameter with a weight of 33.18 grains when limited to those examples in what he called "good condition."<sup>111</sup> These numbers are slightly below the average diameter and weight of the final series of English jettons, the Crowned Rose jettons of 1602-1614. In a different study Mitchiner listed 18 varieties of Crowned Rose jettons, of which two were made from pewter and 16 from lead; the mean average

of Adventurers and planters of the Cittye of london and Bristoll for the Collonye or plantacion in Newfoundland" stated "...the said Treasurer and Company lawfully maye establishe and cause to be made a Coyne to passe current in the said Territories of...Newfoundlande before lymitted betweene the people inhabiting in any said territories of in any the p[re]cinctes thereof for the more ease of traffique and bargaining betweene and amongst them of such nature and of such mettell and in such manner and forme as the saide Councell here shall lymitt and appoint..." The document appointed Percivall Willoughby, John Welde, Raphe ffreeman, Richard ffishburne, John Stokely, William Turner, William Jones, John Slany, humfrey Slany, John Weld, Thomas Juxon and Thomas Jones as the Councell and John Slany as the Treasurer of the Company [the names are transcribed as found in the charter]; see Matthews, p. 19 for the name of the company and p. 22 for the quote regarding coinage and names of the company officers. It is interesting to note the grant stated the metal to be used for the coinage was up to the Company Counsel, thus potentially authorizing base metal halfpence, pence, groats, threepence, sixpence, shillings or other denominations of coinage beyond the traditional farthing tokens. No other Newfoundland grant expressly authorized coinage. George Calvert was indirectly authorized to mint coinage for Avalon because his charter allowed him all the "...rights, Iurisdiccions, privileges, prerogatives, royalties, Liberties, Immunitiyes and franchises whatsoever... To haue[,] exercise, use, and enjoy the same, as any Bishop of Durham, within the Bishoppricke or County Palatine of Durham in our Kingdome of England, hath at any time heretofore had, held[,] used, or enjoyed; or of right ought, or might haue had, held[,] used or enjoyed." See, Cell, *Newfoundland Discovered*, p. 260. Since the medieval Bishops of Durham had the liberty to coin money and actually had done so, then Calvert indirectly had been given that right as well; see Jordan, "Baltimore," pp. 2655-57. There was no mention of the privilege of coinage in Kirke's grant. However, it should be understood, the right to coin money referred to coining silver and gold coins, not lead tokens. Thus, during the period under consideration, a lead token emission would not be viewed, from a legal perspective, as the equivalent of an emission of silver coinage. However, in a region such as Newfoundland with very little coinage at all, the issuing of a token for local use would be viewed as a significant event, both for the issuer, since it would be a symbol of the issuers power and authority, and for the community, because the tokens provided an economic boost to facilitate small exchange.

111 Mitchiner, "English Tokens: c. 1425 to 1672," pp. 137 at the top of the summary. Mitchiner listed 238 varieties from this era (1600-1672) on pp. 123-37 but only had weight data on 225 of them, listed on pp. 134-37. Typically the tokens had a diameter between 13 and 16 mm, with only three of the 225 measured varieties close in diameter to the DK token, but all lighter in weight. The three varieties with a similar size are: type 80, an armorer's token of 20 mm at 43.21 grains; type 158 a unicorn tavern token at 18 mm, weighing 16.42 grains; and type 47, a 1639 dated tavern token showing a gate or portcullis at 20 mm, weighing 64.04 grains. The only items larger than the DK token are two communion tokens, type 229 at 22 mm and 103.24 grains and type 230 at 22 mm and 138.89 grains. It should be noted only a few of the examples included a composition analysis, of those, 40% were completely lead, 52% were pewter consisting of a ratio of tin and lead that fluctuated from 1:1 to 4:1, sometimes primarily tin and other times primarily lead, and finally 8% completely tin. The undated examples illustrated in figures 10-13 are larger and heavier than these averages because they are post 1662 tokens.

diameter for the series was 20 mm and the average weight was 45 grains.<sup>112</sup> Since the public was disposed to accept larger and heavier coins over smaller and lighter examples, it is easy to understand why the slightly larger and heavier jettons circulated as tokens, as was mentioned above. Now, if Kirke had produced the DK disk to be used solely as a counter it, seems very odd that he would make it heavier than any known counter, being over two-and-a-half times the average weight of a London counter and therefore over two-and-a-half times as expensive to produce. However, the same argument could be made in relation to the token farthing, since London token farthings of that period were, on average, slightly smaller than counters. In terms of thickness and weight, the DK disk does not correspond with London tokens or counters.

At 115.7 grains, the DK disk is far heavier than any London lead farthing token. I suspect this anomaly is important and gives us further insight into the nature of the artifact. It is significant to note that the weight of the lead DK disk equals the weight of a lead .44-caliber musket ball, a caliber that was commonly used during the 1640s.<sup>113</sup> Thus, the token had an intrinsic value equal to that of a musket ball. We have seen that in 1635 Massachusetts Bay passed legislation authorizing full bore musket balls to pass at a farthing each, up to a limit of 48 balls, that is, one shilling, per transaction. The intrinsic value of the lead in a musket ball was far below its one farthing trading value. Nevertheless, a musket ball was a fungible object with a practical use and thus had some value to the colonists. Therefore, the citizens of Massachusetts Bay accepted small quantities of overvalued musket balls as a necessary measure to facilitate daily transactions during a difficult era when small change coinage was quite scarce. It is possible that David Kirke, who took control of Ferryland in June of 1638, looked to the Massachusetts Bay legislation of 1635 in order to give some practical value to a token that would be acceptable to the Newfoundland colonists.<sup>114</sup> If this was the case, then both the weight as well as the diameter could indicate the token may have been valued at a farthing.

A token with the DK initials would inform people that the item was emitted by and would be honored by David Kirke, but a lead token with some practical value, namely, a chunk of lead that was large enough to be molded into a musket ball, might have been used and accepted by various individuals and taverns throughout the community. Thus, it is possible the DK lead token may have been envisioned to have a substantial enough intrinsic value that it would be accepted throughout the entire community, during a time when small change was scarce. Under these circumstances the DK token would have been somewhat more than a simple merchant token, whose value was only defined by what the emitter would offer in exchange for it. Rather, like the Massachusetts musket balls with a legislated value, it would be closer to a money substitute accepted without a promise of redemption in silver.

It is noteworthy that musket ammunition was an important commodity in early Newfoundland. Indeed, thousands of specimens of unspent lead shot are recovered annually at the Ferryland

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112 Mitchiner, *Jetons*, vol. 3, pp. 1625-57 for the various series of English counters produced between the 1590s and 1614. The 1603-1614 series is on pp. 1656-57, with items 4746-47 in pewter and items 4748-63 in lead.

113 In December of 2004, I mentioned to Ray Williams in an e-mail that I was investigating the weights of seventeenth century musket balls in relation to the weight of the DK token. Ray mentioned he had a metal detectionist friend, Dan Sivilich, who is an expert on colonial muskets and ammunition and offered to contact him concerning my specific request. Mr. Sivilich sent an e-mail explaining that 115.7 grains of lead was precisely equal to a .437 caliber ball, which is well within the accepted tolerance for a .44-caliber musket ball. He also mentioned that .44-caliber was consistent with 1640s weaponry.

114 On the extensive contact between Ferryland, and Massachusetts Bay see, Rollmann, pp. 58-59 and Pope, *Fish into Wine*, pp. 151-54 and 240-48. Both describe Kirke's chance meeting with Governor John Winthrop at sea. More significantly, the Boston merchant, John Bodington, traveled to Ferryland several times and acted as Kirke's factor in Boston, purchasing the twenty-five-ton ketch *Judith* and the forty-ton *Hopwell* in Charlestown for Kirke, chartering vessels and shipping him many tons of goods throughout the 1640s.

excavation, ranging in size from small birdshot up to .75-caliber musket balls.<sup>115</sup> A quantity of shot was uncovered at the blacksmith shop along with some gunflints and rifle parts; also, in the excavations of Ferryland houses some considerable hoards of lead musket balls have been recovered. At one house two hoards were located, one contained 2,720 and the other 377 balls, while at another house two "very large deposits" of shot in various states of manufacture along with bar lead were uncovered.<sup>116</sup> Newfoundland colonists regularly carried muskets when they ventured outside the village or left their fishing station. In 1663, the surgeon James Yonge noted that each week he would walk four miles from Renew's to Fermeuse Harbour to attend fishing crews from the seven ships stationed there, because they had no surgeon. He explained,

The walk was through the woods and two marshes. I used to leave a bottle of brandy hid behind a tree, which I would mark, and take a dram in my way. Sometimes I should get company, but usually had a dog and a gun, because of the wolves and bears (besides the foxes) wherewith this country abounds.<sup>117</sup>

In addition to using muskets for protection, the weapons were also important for hunting. During the winter, several colonists would supplement their income by furring and hunting, shooting beaver, otters, seals and numerous deer.<sup>118</sup> However, that several large quantities of unspent musket balls have been found indicates the lead balls were not only for local use, but that the manufacture of musket balls was a cottage industry, perhaps most appropriate during the cold winter months when there were no fish to catch or crops to tend. Lead was rather plentiful in Newfoundland since it was used as ballast on cargo ships carrying salted cod.<sup>119</sup>

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115 The *Colony of Avalon* website, page <http://www.heritage.nf.ca/avalon/artifacts/misc1.html> [last accessed Dec. 24, 2005]. Also, Mathias and Foulkes, pp. 102-3, in their discussion of artifact conservation related to the Ferryland excavation, state several thousand specimens of lead shot are recovered each season.

116 Carter, pp. 98-99, figures 15 and 16 and Gaulton and Tuck, 2003, p. 196 on the blacksmith shop. Also, as I mentioned in the text, Nixon, p. 57 states in a house dated to 1660-1696, there were 3,097 pieces of lead shot found in two deposits of which 2,720 were from area E 143 and 377 from area E 145. Additionally, one gun, two lead fishing weights and five complete lead sheets and two partial sheets were uncovered at this site. Further, Crompton describes a house in area D dating to 1674-96, stating, "Lead shot occurs in two very large deposits, one in the eastern half and one in the western half. Both deposits consist of shot of varying size and in varying stages of manufacture, as well as bar lead. These largely discrete deposits suggest that the shot was held together in a container of some sort that was destroyed when the house was sacked [this would have been during the French raid in 1696, when the Ferryland inhabitants were expelled]; otherwise some of the shot (and particularly the large scraps of bar lead for shot manufacture) would have been salvaged. Perhaps these two very separate deposits belonged to two different individuals." See Crompton, p. 10 for the quote and pp. 15-16 for the dating.

117 Yonge, *Journal*, p. 56. About 3.6 miles south of Ferryland is Aquaforte, another 5.2 miles further down the coastline is Fermeuse, and then, about 3.7 miles further is Renew's; Yonge stated that Fermeuse Harbour was "4 little mile" from Renew's Harbour.

118 Pope, *Fish into Wine*, pp. 306-11 and especially 339-40.

119 Recoveries of bar and sheet lead in the Ferryland excavations are mentioned by Nixon and Crompton as discussed in footnote 116 above. Lead was also used for fishing weights, from small sinkers attached to individual fishing lines up to larger weights of several pounds, which were affixed to nets. While the cod were caught on baited hooks using individuals lines dropped into the ocean over the side of the shallops, nets were used to catch herring, caplin and squid. James Yonge explained that herring and caplin, as well as mussels, were used as bait to catch cod. Several examples of the recovered lead fishing weights, both line sinkers and netting weights, are illustrated at <http://www.heritage.nf.ca/avalon/artifacts/display2.html> [on that page see the last two items under "Display Case" and the items under "Drawer 1." Page last accessed Dec. 24, 2005].

Because salted cod was bulky but light in weight it took up far more room per ton than other commodities. Freight ships hauling cod used lead rather than rock as ballast because lead has much more weight per unit of volume than rock and thus takes up far less space, leaving more room for the lightweight but bulky salted cod. In 1637 Kirke estimated a 300-ton ship using stone ballast rather than lead would reduce the storage capacity for fish by forty to sixty tons. [Lead has a density of 11.35 grams per cubic centimeter, far higher than iron at 7.874 grams, nickel at 8.9 and copper at 8.96 grams and rock compounds, which typically contain these metals. Mercury at 11.54, gold at 19.32, tungsten at 19.35, uranium at 18.95 and platinum at 21.45 grams per cubic centimeter are certainly denser than lead but are

Unfortunately, there are no surviving documents explaining the value of the DK token in daily transactions. Given the shortage of small change in Ferryland, we cannot rule out the possibility that the token may have been valued at more than a farthing, perhaps at a halfpenny. In fact, based on the pre-1650 coins found at Ferryland, listed above, there are no items with a halfpenny sterling value. Thus, it is possible that Kirke borrowed his basic concept from the Massachusetts Bay legislation of using a chunk of lead equal in weight to a musket ball, but decided to use a higher valuation. If this was the situation then one might inquire as to how Kirke may have been able to emit his lead token at a halfpenny when that same quantity of lead circulated at a farthing in Massachusetts Bay? Basically, the answer depends on whether DK tokens circulated as a money substitute or as true tokens. If the issue followed the Massachusetts model of a money substitute without redemption value, the acceptance of the tokens by the inhabitants could be attributed to both the need for a halfpenny denomination as well as to Kirke's authority and power to impose a halfpenny value on his coin. However, if the lead disks were issued as a true token emission, then the trading value would depend on whatever value, whether in credit or perhaps even in silver, Kirke would be willing to exchange for the tokens. Of course, it is also possible to assume an intermediate option, namely, that the tokens circulated at a specific value based on the need for that value and that Kirke may have used his authority to insure the tokens were accepted, while at the same time offering some type of limited redemption policy. We saw that in 1609, Robert Cotton suggested London merchants emitted an average of about £5 a year in lead tokens and that 90% of those tokens were put into circulation and not brought back to the issuer for redemption, thereby necessitating a new token emission each year. In this context, it is possible to assume the DK token took the place of the otherwise absent halfpenny (0.5d) and that the fairly prevalent French copper double tournois (at 0.15d sterling) traded at a farthing (0.25d) value. Unfortunately, we have no conclusive evidence as to whether the DK token traded as a farthing or as a surrogate halfpenny. Based on the recent discovery of a smaller size DK token (mentioned below in the postscript) it is possible the token traded at a halfpenny.

If we assume Kirke emitted the DK token either as a farthing or as a halfpenny at the weight of a .44- caliber musket ball, we can get a glimpse of how profitable token production could have been. Naturally, profit would be higher for a money substitute that was simply emitted into circulation at a specific face value than it would be for a true token emission where profit would only be realized from unredeemed tokens. It is not known which model was used for the DK issue, however, due to the shortage of small change it is possible the tokens were not redeemed but rather remained in circulation. Obviously, in a small community such as Ferryland, or even the entire colony of Avalon, production levels would be low, so one could not get rich from emitting tokens; at best it was a profitable sideline yielding some added income. During this era we can roughly estimate the cost of a pound of lead at about 2d.<sup>120</sup> If we assume the weight of the unique

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not found in the quantities and price range that would allow them to be used as ballast!] Pope lists several ships that carried lead including the *Tryfell* which transported one-and-a-half tons of lead in 1608, while in 1640 the *Sara Bonadventure* brought bird shot and a ton of cast lead and the *Judith* brought 200 pigs of lead to Newfoundland; see Pope, *Fish into Wine*, pp. 118-19 and the glossary on p. 442 under "Ton." Obviously, most imported lead would remain on the ship as ballast for the return trip, but some, along with other products brought to Newfoundland from England, would be traded to the colonists for fish.

120 Westminster Abbey purchased an unspecified variety of new lead in 1642 and again in 1649 at 16s per hundredweight (of 112 pounds) or about 1.71d per pound, as listed in Beveridge, pp. 191-92 and the chart on p. 201. Also, the Royal Board of Works, responsible for the upkeep of royal buildings, acquired sheet lead at 18s per hundredweight each year from 1644 to 1647, which averaged to about 1.93d per pound, Beveridge, pp. 485-89 and chart on p. 496. Additionally, from the records for the naval stores at the Depford and Woolrich depots we have an extensive series of prices for sheet lead, in shillings per hundredweight, covering every year during the Kirke administration in Newfoundland, 1638 through 1651, as follows: 15s in 1638-1641 (1.6d per pound); 16s in 1642 (about 1.7d per pound); 18.5s in 1643-1644 (1.98d or just about 2d per pound); 17s in 1645 (1.82d or 1.8d per pound); 17.17s in 1646 (just under 1.84d per pound); 17.25s in 1647 (just over 1.84d per pound); 17.83 in 1648 (1.91d per pound); 17.75 in 1649 (1.9d per pound); 16.25s in 1650 (1.74d) and 16.5s in 1651 (just about 1.77d). The naval stores sheet lead purchases calculate to a mean average of 16.625s per hundredweight or about 1.8d per pound.

surviving specimen of the DK token reflects the average emission weight, at 115.7 grains per token, or the equivalent of a .44-caliber musket ball, we can determine there would be about 60.5 tokens per avoirdupois pound of lead. If the DK token was valued at a farthing, then each pound of lead would yield 15.125d in tokens, if the token was a halfpenny the yield would be 30.25d. Thus, from a pound of lead, costing an average of 2d per pound, Kirke could produce 15.125d in farthing tokens or 30.25d in halfpenny tokens. Even when estimating a fairly substantial charge of 1d per pound for production costs, this yields a profit of at least 12d or a 600% return on investment for unredeemed tokens; which would be doubled to 24d or a 1200% return if the token was valued at a halfpenny. It is clear the enterprise could be profitable and would also facilitate liquor sales and thus, political advantages aside, from an economic standpoint, token production would be well worth the initial modest expenses of acquiring molds and obtaining a stock of lead.<sup>121</sup>

We do not know when the DK token was first produced, other than it had to have been sometime between David Kirke's arrival in Ferryland in June of 1638 and when he was taken back to England in 1651. However, if we assume the token was created for use in Newfoundland taverns and that the single known specimen represents a chance survival from a larger issue, we can

In addition to some contemporary lead prices from England we are fortunate to have information on the cost of English lead shipped abroad. Nicolaas Posthumus has calculated and published the wholesale prices realized on the Amsterdam auction produce exchange, recorded by monthly average prices, for the entire colonial era and beyond, for over 225 products, including English lead. For the period during Kirke's administration of Newfoundland, 1638-1651, we have values from the Amsterdam wholesale exchange in guilders current money for lots of 100 pounds of English lead, in pigs, spanning most years, but unfortunately we only have the necessary data to convert those amounts into sterling equivalents for the years 1638 and 1648-1651, see Posthumus, pp. 387-88, table 180. The annual average wholesale price for 100 pounds of English pig lead in guilders current money is: 1638 - 7.37, 1640 - 7.50, 1641 - 8.40, 1642 - 8.30, 1645 - 10.17, 1646 - 9.45, 1648 - 7.93, 1649 - 8.12, 1650 - 7.92 and 1651 - 8.33. There are no sales recorded for the missing years. These sums are only recorded in money of account called guilders current money. To convert the sums to British sterling we first need to convert guilders current money into another money of account called bank guilders, which requires us to know the *agio*, or discount rate, for the year in question. Unfortunately the *agio* is only available for 1638 (0.50), 1648 (2.02), 1649 (2.53), 1650 (3.32) and 1651 (3.06), and thus these are the only years in the group for which we can derive an accurate conversion rate. The sterling values are calculated by converting bank guilders, which is a money of account, into Flemish shillings, which is an actual coin, and then converting Flemish shillings into sterling at the prevalent exchange rate. On the conversion see McCusker, pp. 44-45 and the subsequent charts listing the *agio* and the shilling exchange rates on pp. 46-60. Using this method we find the price of 100 pounds of English pig lead on the Amsterdam wholesale market averaged 13s11d in 1638 (or 1.67d per pound); 15s4d in 1648 (or 1.84d per pound); 17s in 1649 (or 2.04d per pound), 16s2d in 1650 (or 1.94d per pound) and 20s in 1651 (or 2.4d per pound). On average, the wholesale price for English pig lead was slightly higher per pound in Amsterdam than finished sheet lead was at the London naval storage depots. In part this is due to the shipping and insurance charges as well as export and import taxes, which are all included in the Amsterdam price.

Both the London and Amsterdam prices demonstrate the cost of lead was lower in 1638-1642 and then started to rise during the English Civil War when mining production fell; it appears the price started to drop once the Commonwealth was established. Overall, English sheet lead prices averaged about 1.8d for this period while Amsterdam pig or bar lead prices were slightly higher. Precisely what the charges would be for shipping pig lead from England to Newfoundland is not known, but it was probably fairly low, for, as discussed below, Newfoundland fishing ships used pig lead as ballast, thus, they would be carrying an abundant supply, most of which would be retained on the ship for a specific purpose but some of which could be traded to the settlers for fish credits. Based on the surviving prices it seems an estimate of an average price of 2d per pound for pig lead in Newfoundland would not be far off the mark.

121 As mentioned in footnote 4 above, molds for lead tokens were typically made of wood, chalk, plaster, limestone, sandstone or green sand and contained only a crude design, thus they were quite inexpensive in relation to the cost of the engraved steel dies required for hammer struck or machine press coins. The relative ease in producing a mold can be surmised from the production of a large lead medal in 1644 to commemorate the profession to the crown by the village of Hasfield [figure 14]. The medal, which is contemporary with the much smaller DK token, was produced by or for the inhabitants of the small English village during a very difficult period. The event occurred while the royal army occupied the countryside during an unsuccessful siege of the parliamentary stronghold of Gloucester. Charles's army converged on Gloucester in July 1643 and remained in the shire for 18 months. Hasfield is a village six miles north of Gloucester, which had a population of about fifty families in 1650, see Herbert, pp. 92-95 and Elrington, pp. 282-90.



**Figure 14:** A Royalist medal in lead dated 1644 commemorating the village of Hasfield in Gloucestershire, proclaiming their allegiance to the crown during the Civil War. Shown actual size. The metal weighs 1,589.5 grains with a diameter at 50.80 mm horizontal and 49.78 mm vertical; it is 6.52 mm thick at the rim and has a medal turn. The obverse displays a vertical sword along the central axis between the initials C to the left and R to the right for Carolus Rex. The sword and royal initials were deeply cut into the mold and are in high relief on the medal, but below the sword hilt, less conspicuously displayed on the medal in very low relief, is an 8 to the left and Sn: to the right. On the reverse is the legend: HAS / FELDE [sideways ·s· ornament] / FOR [crown] / 1644. Recovered by a metal detectorist in the vicinity of Northampton, which is about 80 miles east of Hasfield. *Reproduced with permission, courtesy of the Robert Gore Numismatic Collection, Department of Special Collections, University of Notre Dame.*

estimate a probable dating for its initial emission. We know that from the time of his arrival in June of 1638, Kirke began consolidating his position and instituting monopolies. Thomas Pitcher, captain of a fishing ship from Dartmouth, England, explained that as soon as Kirke landed he immediately began seizing fishing stations, confiscating Pitcher's station for his own ships. It seems Kirke's initial steps of seizing the major fishing stations, engrossing supplies and instituting monopolies was completed by early 1640, for at that time he turned his attention to the more remote and less significant holdings. According to the testimony of Thomas Cruse from Bay Bulls, in 1640 Kirke was expanding his control and increasing his income by confiscating the numerous small "fishing houses" in the outlying areas and then renting them to the local fishermen. He was also creating a larger market for his wine and spirits monopoly by selling liquor licenses to individuals throughout the colony. We also have seen these were the years American colonists struggled to obtain enough small change for everyday purchases. In 1635 Massachusetts Bay had authorized the use of musket balls as farthings and in 1637 both Massachusetts and Connecticut passed legislation legalizing and regulating the use of wampum beads, refining that legislation throughout the 1640s.<sup>122</sup> Further, we have noted the revival of the use of lead tokens in London starting ca. 1638, and that they became fairly common by the outbreak of the English Civil War in 1642. It is in this historical context that we find David Kirke, in 1640, urging settlers throughout the colony of Avalon to purchase tavern licenses. I suspect it would have taken Kirke a few years to fully implement this initiative and expand to the twenty-five or so taverns or tippling houses estimated to have been in operation in Avalon during the Kirke administration.

<sup>122</sup> See footnote 80 above on wampum. During the 1640s Massachusetts Bay and other New England colonies started rating commodities that would be accepted at the rated values in payment of taxes. Massachusetts also started crying-up the value of silver to keep it in the colony. Rating commodities and crying-up specie did not resolve problems with small change but were meant to address problems resulting from the general deficiency of coinage in the colonies.



Kirke understood that a shortage of small change was detrimental to the tavern business and it is quite likely he knew what was being done to remedy the small change crisis both in other colonies and back in London, where the headquarters of the family wine import business had been located. In this context it seems quite likely that the DK token was produced to answer the need for small change in Ferryland and possibly all of Avalon and was probably first emitted sometime between 1640 and the outbreak of the English Civil War in 1642 or soon thereafter.

### **Concluding observations**

The evidence suggests the recovered lead disk bearing a DK ligature was a token emitted by David Kirke in Ferryland. It may have been initially issued around 1640 or soon thereafter, thus earning it the title as the earliest surviving coinage produced in British North America. Hopefully, additional examples will be uncovered to better discern the weight range of these artifacts and give us more insight regarding the circulation of this token in Ferryland, and possibly in the surrounding area.

The DK token does not remove Massachusetts Bay silver from its premier position as the first significant British colonial coinage made in North America, nor does it supplant Hull and Sanderson as the first successful colonial minters. For thirty years the Massachusetts Bay mint produced considerable quantities of high quality silver coinage that circulated for generations. "Boston shillings" were used along the Atlantic coast from Canada down to Virginia and throughout the Caribbean; in fact, Massachusetts Bay silver was designated as legal tender as far away as Barbados.<sup>123</sup> The DK lead token was clearly a crude item produced in very small quantities that, at most, may have circulated within a very restricted area, namely the province of Avalon. Indeed, it was actually a private issue lead token rather than a true coinage emission. However, it is certainly a precursor to Massachusetts Bay silver, affording us additional insight into coinage and exchange during the earliest era of British colonization and, as such, is an important new discovery for colonial numismatics.

### **Postscript**

After I completed this paper, Professor James Tuck informed me in an e-mail of February 15, 2006, that two additional DK tokens had been recovered at the Ferryland excavation during the summer of 2005.<sup>124</sup> One example is the same size as the discovery piece and appears to be from

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123 Mossman, pp. 80-81. Also, Phil Mossman informed me of a notice in *The Boston Gazette, and the Country Journal* of Monday, December 28, 1789, issue number 1839, p. 3, column 2, reporting a news item from Worcester of December 24 stating "Owing to the great number of counterfeit, and mutilated New-England shillings and sixpences, they are now put out of circulation, as a currency; as are also English and French shillings and sixpences, unless the impressions on them are fair and good." This demonstrates pine tree silver continued to circulate throughout the British colonial and U.S. Confederation eras.

124 On the Colony of Avalon website at <http://www.heritage.nf.ca/avalon/news/report05.html> (updated February 2006) Professor James Tuck published "Archeology Report 2005: Outstanding Finds at Ferryland," which includes the following updates on numismatics: "Most interesting among the more than 50,000 artifacts discovered in 2005 are the last of a small hoard of seven silver coins and two finger rings – one a "goldstone" ring consisting of a glass band containing copper filings that retain their sheen and give the appearance of gold and a gold ring with enamel work surrounding a silver bezel set with quartz and glass stones. The coins, two of which were found several years ago, include an Elizabethan "groat," or four pence piece, two shillings, three half-crowns and a one ounce Spanish "cob," a small slab of silver mined and minted in Peru. By a strange coincidence the coins were found on September 21, the same date as the French attack in 1696 when they were probably hidden by their owner who never returned to retrieve them."

"Among the other currency found during 2005 were two small lead tokens bearing the initials "DK" almost certainly those of Sir David Kirke who resided at Ferryland from 1638 until 1651 when he was recalled to England during the Commonwealth period to account for his activities at Ferryland. Kirke never returned to Ferryland and died in London in 1654. In all likelihood the tokens were struck for use in place of scarce small change during Kirke's stay at

the same mold, while the other specimen is a smaller token bearing the DK ligature but lacking denticles. Most likely the larger token had a higher value than the smaller version. Paul Berry, Curator of the Currency Museum at the Bank of Canada, has examined these items and sent me the maximum measurements.<sup>125</sup> The larger newly recovered DK token, numbered as CCAF/2.508981, has a diameter of 19.5 mm, a thickness of 3.4 mm and weighs 6.1 grams, which equals 94.14 grains. More specimens are needed to form definitive conclusions, but this example is rather close in size to the discovery piece, being only about 1 mm wider but slightly thinner, with a weight differential of 18.6%.<sup>126</sup> The weight differential is beyond the acceptable limits for regal issue specie coins as defined in the trial of the pyx, but it is well within the observed tolerance ranges for contemporary English lead tokens produced from the same mold. Measurements for multiple specimens of a single variety of a lead token are hard to find, since most catalogers limit themselves to presenting just one example of a specific token variety. Fortunately, Mitchiner reported measurements of multiple specimens for three different varieties of contemporary lead tokens. From his small sampling we find two of those three lead token varieties exhibit a diameter differential of about 1 mm and a weight differential for one variety of up to 22.1% and for another variety up to 22.8% between the heaviest and lightest specimens, with the third variety displaying no diameter fluctuation and only a 12.2% weight differential; from other sources we find lead token varieties with weight differentials of 5.6%, 8.3%, 10%, 30.9% and 32.8% between the heaviest and lightest specimens.<sup>127</sup> Within the context of these results the 18.6% differential between the two currently recovered larger size DK tokens does not seem anomalous.

The smaller DK disk, identified as CCAF/2.512084, has a diameter of 14.65 mm, a thickness of 1.25 mm and weighs 0.95 grams, which equals 14.66 grains. This item is about one-quarter smaller in diameter but is only about one-seventh of the weight of the larger token. Gold and silver

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Ferryland. According to Paul Berry, Chief Curator of the National Collection of the Bank of Canada, they are probably the oldest pieces of money made for use in British North America."

Also, significant among recent finds from Ferryland is a item described by Paul Berry for a forthcoming article, that may represent another lead trade token, possibly one brought over from England or maybe another item that was produced locally. There is no archeological context given for the object but it is described as a lead piece with "a rather sophisticated relief design consisting of an as yet, unidentified image set within a simplified bough of foliage. Like the Kirke piece, this object is uniface. It measures 20.8 mm in diameter, is 1.8 – 2.1 mm thick and weighs 7.2 grams." Quoted from Paul Berry's forthcoming article "Canada's First 'Coinage'?"

125 Private e-mail from Paul Berry on March 29, 2006.

126 The discovery piece maximum measurements are: diameter 18.33 mm, thickness 3.57 mm and weight 115.7 grains.

127 Among the 232 varieties of English lead tokens from 1600-1672 that were analyzed by Mitchiner, most varieties were reported with measurements from just one example. Mitchiner reported three varieties with measurements for three different specimens, they are: type 77 having a diameter range of 1mm, between 13.5 to 14.5 mm, with a weight differential of **22.8%** with the heaviest example at 43.98 grains and the lightest at 33.95 grains; type 227 with a diameter range of 1mm, between 15 to 16 mm and a weight differential of **22.1%** with the heaviest example at 59.41 grains and the lightest at 46.3 grains, while type 143 has closer tolerances with all three specimens at a diameter of 15 mm and a weight differential of only **12.2%** with the heaviest example at 29.01 grains and the lightest at 25.46 grains (Mitchiner, "English Tokens: c. 1425 to 1672, pp. 134-37). Also, in another work Mitchiner lists varieties of English lead tokens from 1674-1800, with only one variety reported in multiple examples, that is item 5389 with four examples cast from the same mold; this variety has a diameter range of 1 mm from 25 to 26 mm with a weight differential of **32.8%** with the heaviest example at 144.76 grains and the lightest at 97.22; see Mitchiner, *Jetons*, vol. 3, p. 1816. For lead tokens from other periods Dean, p. 145, describes undated tokens from Wallingford Bridge listing one variety in six specimens, items 109-114, all at 14 mm but with a weight differential of **30.9%**, with the heaviest example at 46.45 grains and the lightest at 32.1 grains, and another variety found at both Windsor Bridge and Wallingford Bridge, in three specimens, items 19, 91 and 92 at 19 mm with a weight differential of only **5.6%**, with the heaviest example at 52.32 grains and the lightest at 49.8 grains (Dean, pp. 144-45); Archibald describes an Evesham hoard of lead tokens that date to the late Stuart or early Georgian era with one variety in six specimens, items 2-7, at 18 mm with a weight differential of only **8.3%**, with the heaviest example at 90.9 grains and the lightest at 83.33 grains and a second variety in three specimens, items 16-18, with a weight differential of **10%**, with the heaviest example at 134.72 grains and the lightest at 121.3 grains (Archibald, p. 114).

coins from the seventeenth century had an intrinsic sterling value equal to their face value and therefore the issues retained a precise weight ratio among lower and higher denominations in the same metal. However, the intrinsic value of lead tokens was far below their face value, therefore there was no need to go to the expense of retaining precise weight relationships between various token denominations from the same emission, as long as the sizes of the different denominations made the items easily distinguishable. Thus, it is possible the smaller DK token may have been assigned half, or possible even one-fourth, the value of the larger token; the relationship could have been a halfpenny to a farthing, a farthing to half-a-farthing or possibly even a halfpenny to half-a-farthing. We do not yet have enough evidence to make a substantive statement on valuation. However, these two new finds demonstrate the tokens were, in fact, produced in some quantity and, apparently, circulated in at least two denominations. Also, with two additional specimens recovered in a single season, it appears even more likely that further examples will be uncovered as the excavation progresses. 

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